Health and National Security:

working together for a healthy population

There is unarguably a connection between the tools of the nation state, and that country's national security. While traditionally high priority items such as diplomacy and military training are generally first mentioned when it comes to national security, it is surprising that another just as equally important topic, Public Health, does not produce such visceral images. The following project attempts to address the connection between these two issues, the health and national security of a country. The major argument for the Public Health and national security connection is the concept of prevention as a way of preempting potential Public Health issues. Prevention in terms of this project is with respect to ensuring that a population has the tools necessary to prevent major epidemics and disease outbreaks. Relatively inexpensive vaccines and disease-preventing education can mean the difference between a life of poverty and one that is much more comfortable. Simply put, a healthy population is in its most basic sense, "a tool of the state".

We can deduce that a population that has been severely weakened will not be able to contribute to the financial or economic output of the state itself. As it stands, absenteeism accounts for billions of dollars a year in lost productivity. The focus of the state therefore should be on keeping a population healthy and protected against illness; preventative solutions are not only proactive in nature, they can also help lead to early detection and perhaps an early cure; to this end there could also be savings on funds that might otherwise be appropriated for health issues.   Under the concept of

prevention, we will mention the idea of preparedness. Logically, the better prepared a population is in case of an epidemic, the less likely it will feel the effect. Vaccinations as well as access to potable water are common Public Health initiatives because they can help stave off serious infectious diseases and prevent the worsening of other potential disasters. The state's readiness, both in terms of personal and population-wide preparedness can certainly help with national security because in the case of a natural disaster or an epidemic, the preparedness of a state has a close correlation to its ability to remain solvent as well as its recovery time.

As we have seen in recent years, a variety of natural disasters have challenged states all over the developed and developing world. By having certain overarching Public Health tools in place, a state can ensure that situations do not become unmanageable and that a population will remain protected or at the very minimum able to deal with a crisis that has arisen. One remarkable aspect of the entire puzzle is that International Health Investments are seldom coordinated or integrated into aggregate national health strategies. This project will look at different countries' policies as well as implementation of Public Health program. While some countries have high standards as well as developed systems of Public Health there are others that are marginal and as a result have severe effects on their population. This report will look at the connection between Public Health and security and if it is possible to create a more holistic connection between the two.

What is security?

One of the first notions that we must consider is the definition of security. While often this is defined in terms of defense and has a very physical notion, such as geographic borders, every changing technology, commerce and trade have made this term much vaguer. Now security represents everything from large computer infrastructures, to border security to natural resources protection. Furthermore, in the past decade the higher and higher profile that the assortment of new biological and chemical weapons has received make security and its exact meaning a near nebulous concept. While I would argue that security has always meant different things to individuals, for example the dove and hawk camps in the United States, in today's world it is no longer reasonable to think of security as a purely defense department related issue. Yet we should add that by including Public Health under the umbrella of national security we are altering even larger paradigms such as international relations, the global balance of power and even international trade.

If we take a historical look at the situation, Public Health problems, have for a long time been a topic of diplomatic relations. Beginning of the nineteenth century, we can point to many examples in both Europe as well as the United States of infectious diseases that forced sovereign states to consider Public Health in the security realm. If we consider the conditions of urban dwellers in the mid 19th century, it is understandable why outbreaks of diseases such as cholera occurred. Beginning in the 1850s many large cities, especially in developed nations, began to make investments in water supply and sewage infrastructures due to the pressure their large and ever growing populaces were placing on resources. Without the previous experience of dealing with populations on

such a large scale, these improvements became a means of easy transmission of disease. Furthermore as this period also saw an increase in global trade, another transmission method was created. There are many accounts of passenger ships visiting Europe that were quarantined or blocked completely docking in port.

As we can see for at least the last 150 years government have been cognizant of the fact that Public Health plays a role in the affairs of the state. David Fidler, professor at Indiana University School of Law mentions, "the prevention and control of infectious diseases has, therefore, been a foreign policy concern of states for a long time. Public Health as a foreign policy concern is not the same thing, however, as Public Health constituting an issue of national security."[1] So it would seem that for a long time there was a disconnect between the two fields, with many individuals feeling that there was little overlapping. As Fidler goes on to state, "traditionally, for most states, national security is one of the most important, if not the most important, foreign policy concern." Therefore if Public Health is not considered under the former, it follows that it will not be considered in the latter. As we will analyze in the following sections, the notion of Public Health as part of he overall national security picture is a logical assumption.

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1 David Fidler, "Public Health and National Security in the Global Age: Infectious Disease, bioterrorism and Realpolitik " *The George Washington International Law Review*, January 1, 2003.

What is Public Health?

As we saw with the aforementioned concept of national security, the idea of Public Health also is quite varied and has changed over time. While it would appear that with the birth of civilization humans inherently understood the need to transport wastes away from settlements as well ensure access to potable water, it was not really until the middle of the 19th century that the concept of Public Health on a large scale began to develop. As previously mentioned with the rise of large urban areas, there was a need to ensure that the public lived with access to certain necessities.

One of the very first definitions of Public Health was put forward in 1920 by Winslow, "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals".[2] Yet it should be mentioned that in previous historical periods elected officials did not have to think in terms of the "collective health" of a nation because the 19th century was the time period in which nation states began to arise. Previously smaller groups of individuals lived according to the regional rules and norms.

With the development of more and more infrastructure, the nation state became the framework in which large policy decisions needed to be made. State officials quickly realized that many of the large Public Health issues overlapped with social issues and had a strong presence among the poorer members of the population. Initially, many

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[2] C.-E. A. Winslow, "The Untilled Fields of Public Health," *Science*, n.s. 51 (1920), p. 23

social and religious organizations did the work of taking care of these groups of individuals, yet there was a realization on the part of government officials that matters of such a large scale should not be left to ad-hoc organizations. As aforementioned the large and disastrous Cholera outbreaks from 1830-1850 meant that while the major effects were felt by poorer members of society, certain diseases had the potential to effect entire population and could be labeled a Public Health problem.

Perhaps the WHO definition of Public Health would be the most effective to use for the purposes of this paper because it is both exact as well as flexible to vary from country to country. According to the WHO, Public Health is defined as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[3] What is essential to this definition is that it provides for a more holistic concept; one in which Public Health is not limited to traditional ideas connecting it only to health care; rather it includes a variety of social and emotional paradigms that may previously not been included. Another important item to note is that this definition was developed in 1946, more than 100 years after the major outbreaks of disease in industrializing nations. While perhaps there were ideas about how to keep a population healthy, the term came into common use in the middle of the 20th century

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[3] WHO Definition of Health Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, 1946

Modern Public Health

What we can say in terms of new concepts of Public Health is that the developed world and the developing world face different challenges and that is why the face of modern Public Health has grown increasingly complex. We can look to certain continents such as Africa, Asia and South America and see how many countries are still faced with infectious disease outbreaks that are preventable and further worsened by poverty and poor nutrition. Yet simultaneously we can examine Europe and North American and see that there too exists the presence of preventable diseases such as child obesity, Type 2 Diabetes as well as chronic diseases such as cancer and heart disease.

The major difference with modern Public Health is that there is an awareness that Richard Wilkinson and Michael Marmot of the WHO state, "our health is affected by many factors including where we live, genetics, our income, our educational status and our social relationships - these are known as 'social determinants of health'. A social gradient in health runs through society, with those that are poorest generally suffering the worst health." [4] These gradients have a major effect on the health of individuals as well as populations. Modern Health sees the systems as a whole rather than in pieces. If one section is not working it severely impedes the functioning of the others.

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[4] *The Solid Facts: Social Determinants of Health* edited by Richard Wilkinson and Michael Marmot, WHO, 2003

Prevention as the first line of defense

Now that we have set some definitions it is time to discuss the notion of prevention, a major artery of Public Health as the first line of defense when it comes to Public Health. Prevention as a concept is vital to national security because it is a field that the nation has complete control over. With proper planning and the correct budgeting, the Ministry of Health of a nation can ensure that its members have a certain standard of living with respect to health. By ensuring that a population has the tools to protect itself against certain diseases, nations can ensure that a healthy population can be engaged in other pursuits such as gainful employment rather having to worry about mere survival. This section begins with a series of examples from both developing and developed nations that have different preventative systems and then moves on to look at Turkey's concept of preventative Public Health programs.

Public Health Examples:

The following section will look at some examples of how the prevention aspect of Public Health is administered in certain countries and attempt to make conclusions about the system's overall impact on the population's health. With the use of statistics we will make connections between the state of the Public Health and the overall policy as well as link it to national security issues. We should state that Public Health is such as vast field that a direct correlation between it and national security is quite tenuous but we can make certain conclusions about the overall health of a population and the stability of a nation.

Finland: A Model of Public Health

We often hear about how Scandinavian health systems models are high in care as well as cost. Yet it is not just the health care system we need to consider because Public Health is a much lager concept that is concerned with the overall health of the populace rather than just individuals which is generally what a health care system deals with. As mentioned previously there are a variety of factors which make up this topic ranging from both environmental to genetic factors. Yet when we consider Public Health models in Finland we can see that there are some particularly positive aspects to the overall health figures of the country.

One remarkable aspect about the Finish system is that there is an International Affairs Unit at the Department of Public Health with links to large international organizations such as the WHO, the UN and the Public Health systems of neighboring countries. If we return to the introduction, we made a claim that there is generally not a close connection at the national level with the international bodies responsible for global health concerns. Yet Finland has made it a priority to develop long-standing links with the aforementioned bodies so as to further the concept of Public Health in the country.

Furthermore, the International Association of National Public Health Institutes in Finland is a catalyst for the development and growth of the world's national Public Health institutes. It is a leader among Public Health institutes. Not only does the Finnish concept have a cohesive international-domestic link, it also is trying to help other countries establish the same type of relationship to further notions of Public Health. The Finnish Public Health concept is multi-leveled and multi-faceted. Examining the

Department of Public Health of the country finds a variety of topics including: health care professionals; victim-offender mediation; regular home care; social protection expenditure; institutional care and housing services in social care; social assistance; private social care provision; people with disabilities, social credit and child day care.[5] Looking at the diversity of topics included under the Finnish model, we can observe that it does not just consider traditional "health" issues as part of Public Health; in fact the model is so large as to be comprehensive.

Also what should be noted is that the type of care that is included is based on preventing Public Health problems and is quite proactive in nature. The logic is that addressing the problem early or before it begins can avoid unnecessary Public Health issues but also perhaps be less expensive in the long run.[6] While we cannot directly tie the relatively stable national security to the Finnish concept of health we can imply that the overall health of the population serves as some measure of stability within the population. By eliminating preventable diseases as well as undesirable living environments, the Department of Public Health has once again allowed the population to focus on other equally important pursuits such as education or employment. Streamlining the system towards a more holistic approach means that other areas of society are not as greatly impacted by Public Health issues.

If we look at some overall health statistics we can see that Finland has achieved quite impressive results with respect to its health care system, which once again is just one measurement of overall Public Health.

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[5] National Institutes for Finnish Health and Welfare, http://www.thl.fi/en_US/web/en/research/statistics
[6] National Institutes for Finnish Health and Welfare, http://www.thl.fi/en_US/web/en/research/statistics

- In 2008, Finland had 2.7 practicing physicians per 1, 000 population, below the OECD average of 3.2. On the other hand, in 2007 there were 15.5 nurses per 1,000 population in Finland, the second highest among OECD countries and much higher than the OECD average of 9.0 in 2008.

- The number of acute care hospital beds in Finland was 1.9 per 1 000 population in 2008, lower than the OECD average of 3.6 beds per 1, 000 population.

- During the past decade, there has been rapid growth in the availability of diagnostic technologies such as computed tomography (CT) scanners and magnetic resonance imaging (MRI) units in most OECD countries. In Finland, the number of MRIs increased very rapidly since 1990, to reach 16.2 per million population in 2008, higher than the OECD average of 12.6 MRI units per million population. On the other hand, Finland had 16.5 CT scanners per million population in 2007, less than the OECD average of 23.8.[7]

What we can deduce from the figures mentioned above is that the Finnish concept of Public Health is comprehensive meaning that its population has the access as well as the concept that population health is a vital aspect to the country. While there are some figures that need improvement because they are below the OECD average, it is clear that the Finnish model has elements built into its program that can address many of the health-related needs.

Public Health in Haiti:

One country that has been consistently challenged with respect to modern concepts of Public Health is Haiti. Arguably one the poorest nation in the western hemisphere, the country is suffering from much more than just Public Health problems. As essentially a

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[7] *OECD Health Data 2010* How Does Finland Compare? www.oecd.org/dataoecd/42/44/40904932.pdf

failed state, Haiti's problems abound. One large area that compounds problems however is the lack of resources both financial and medical that its citizenry face on a daily basis. Major problems that pose a serious issue to Public Health include the fact that "water supply and basic sanitation services are still very deficient. No city has a public sewerage system, and there only are isolated wastewater treatment units throughout the country. Solid waste management is a serious problem; bad excreta disposal practices are polluting almost all 18 water sources supplying Port-au-Prince."8 According to the PAHO, the Public Health Priorities are:

1. Reduce and prevent further deaths, injuries, and illnesses
2. Determine and meet critical needs for water and sanitation, healthcare, and food
3. Verify the status of healthcare facilities and assist in standing up healthcare services
4. Assess and address emergency maternal and infant health needs
5. Provide health education to help people protect their own health and safety
6. Conduct disease and injury surveillance in displaced and non-displaced populations

When we take a look at the national security issues in Haiti we can say that the lack of domestic infrastructure including the Public Health aspects severely affects the functioning of the state. For example only 46% of the population has access to drinking water, 57% of the population has been vaccinated against tuberculosis and only 58% of the children under 1 have been vaccinated against polio. These infectious diseases that are preventable have dire consequences on the economy on the most basic of levels.

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8 Country Health Profile: Haiti," *Pan-American Health Organization*, 2001
http://www.paho.org/english/sha/prflhai.htm

Lack of established vaccination schedules means that families spend a large amount of time and financial resources on recovering from illness of suffering the consequences of it. Due to lack of sanitation as well as access to potable water, simple daily tasks are unable to be conducted. The ability for these daily tasks to function gives a certain regularity and stability to the major tools of the state. Important paradigms such as trade and commerce are nearly impossible when the population does not have access to basic needs or is subject to constant illness.

Public Health in Turkey:

Throughout this study we have analyzed certain terms as well as given examples of how certain countries apply these paradigms. Now I would like to focus specifically on Turkey and given an over view of the Public Health situation in the country as well as highlight some key information about the system. We should however keep in mind that as Fidler states, "Public Health differs fundamentally from health care because of its focus on population health and the responsibility of the government in protecting populations from health threats."[9]

One important measure of how important the concept of health is to a country would be the expenditure on health itself. We can point to a thought provoking comparison

[9] David Fidler, "Public Health and National Security in the Global Age: Infectious Disease, bioterrorism and Realpolitik ". *The George Washington International Law Review*, January 1, 2003.

Fidler goes on to differentiate: Public Health focuses on: (1) the health and safety of populations rather than the health of individual patients; (2) prevention of injury and disease rather than treatment and care; (3) relationships between the government and the community rather than the physician and patient; and (4) population-based services grounded on the scientific methodologies of Public Health (e.g., biostatistics and epidemiology) rather than personal medical services

between Turkey's GDP and its Public Health expenditure. Although the GDP of the country was about 6 percent in 2004 it health expenditures have shrunk from 6% to 5% of GDP in the last five years. These percentages amount to about $464 USD per person per year or about $580 USD in 2004, adjusted for purchasing power parity, for estimated 70 million citizens. This compares with an OECD average of 2550 USD The health spending per capita in Turkey is the lowest among all OECD countries.[10]

Figure 1: Turkey – Health Expenditure
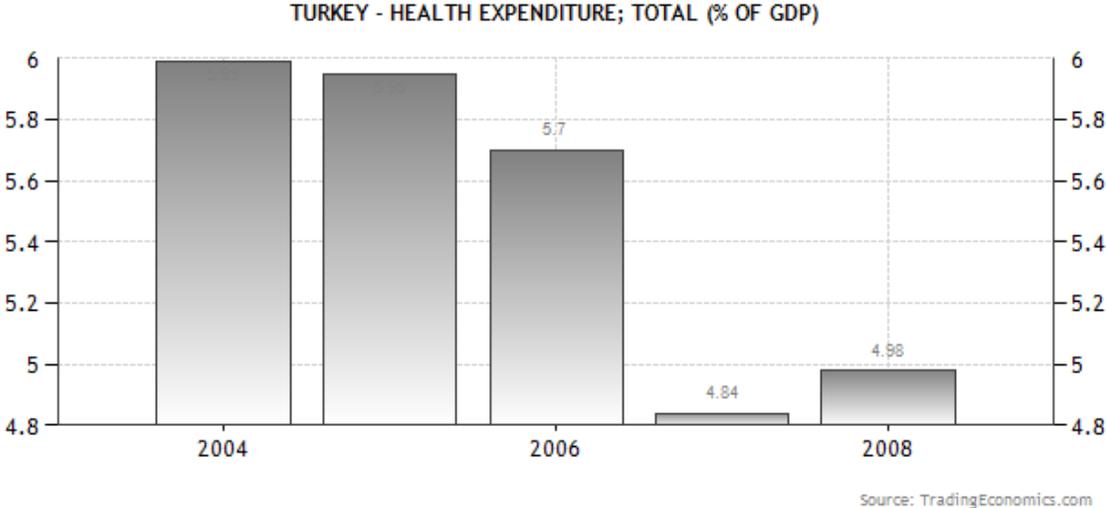
Once again a country's expenditures on the health care system is not indicative of the quality of care that is received but it is demonstrative of the importance health plays in the affairs of the state as well as the comprehensiveness of the overall Public Health program. While not an exact truism, more investment in health generally results in great access or exposure to care for its citizens.

[10] How Does Turkey Compare? *OECD Health Data 2006*
http://www.oecd.org/dataoecd/29/54/36959956.pdf

While the major funding sources of the state hospitals are; allocations from Government (83%), fees paid by insurers or individuals (12%), and some taxes on fuel and cigarettes (5%), it should be mentioned that Turkey is one of the two OECD countries not to have some form of universal health coverage, the other being the US.[11] If we can indulge in a few more statistics we can point to some other figures that seem troubling.

- Despite an increase in the number of doctors in recent years, Turkey continues to have the lowest doctor to-population ratio of all OECD countries. In 2003, Turkey had 1.4 physicians per 1,000 population, less than half the OECD average of 3.0.
- Similarly, there were only 1.7 nurses per 1,000 population in Turkey in 2003, compared with an OECD average of 8.3.
- The number of acute care hospital beds in Turkey in 2004 was 2.4 per 1, 000 population, below the OECD average of 4.1 beds. In most OECD countries, the number of hospital beds has fallen in recent decades, but in Turkey it has increased from 1.5 per 1,000 population in 1984.[12]

Looking at the aforementioned figures we can say that Turkey has continued to make some progress in recent years in order to meet its Public Health needs. While there are improvements it is clear that there is still a great deal of work that needs to be done. When we look at some other figures we can see how the level of investment can affect the entire system as well as the concept of overall care.

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[11] Docteur, Elizabeth (2003-06-23). "Reforming Health Systems in OECD Countries" (PDF). *Presentation, OECD Breakfast Series in Partnership with NABE.*. OECD. pp. page 20. http://www.oecdwash.org/PDFILES/health2003_wash.pdf. Retrieved 2011-01-11.
[12] How Does Turkey Compare? *OECD Health Data 2006* http://www.oecd.org/dataoecd/29/54/36959956.pdf

- In Turkey, life expectancy at birth increased by over 20 years between 1960 and 2004, rapidly catching up to the OECD average. Still, in 2004, life expectancy in Turkey stood at 71.2 years, below the OECD average of 78.3.

- As in other OECD countries, infant mortality rates in Turkey have fallen dramatically over the past few decades. The rate stood at 24.6 deaths per 1 000 live births in 2004, still over four times higher than the OECD average of 5.7. (Just for comparison: Infant mortality is the lowest in Japan and in the Nordic countries: Iceland, Sweden, Finland and Norway).

- The proportion of daily smokers among adults has shown a marked decline over the past twenty-five years in most OECD countries. Turkey has achieved some progress in reducing tobacco consumption, with current rates of daily smokers among adults decreasing from 43.6% in 1989 to 32.1% in 2003. [13]

From the results above we can see that Turkey is not in the direst situation. When we compare the Public Health system to Haiti's we can say that there are major differences. The Turkish Public Health system is established but one of the major issues is that the organization is severely lacking. Access to care may be possible but general Public Health campaigns are not as effective as they need to be, especially with information dissemination. There are targeted Public Health campaigns aimed at ensuring all young girls attend school at least till 8th grade. This is vital because according to UNICEF statistics only 71% of females go on to attend secondary school. This may help to explain why infant mortality is still exceedingly high because of lack of information about neonatal care or child care till age 1; educated mothers generally means educated children. Furthermore although there has been a great push for

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[13] "How Does Turkey Compare?". *OECD Health Data 2006*
http://www.oecd.org/dataoecd/29/54/36959956.pdf

education about smoking especially with the "Green Crescent and the World Lung Foundation", it seems that after years of decline, smoking is on the rise again in Turkey.

If we use this information about Public Health campaigns and analyze it in the overall matrix of Turkey we can see that economically the country may be developing and accessing a significant amount of FDI but the lack of investment in Public Services such as education and health will severely cripple the country's future development. A few significant figures to mention is that 5% of the GDP is spend on health while only 10% is spent on education and nearly 8% of GDP is spent on actual defense.[14] This begs the questions about national security once again and its definition. While significant expenditures are being invested on "traditional" defense resources, this is nearly the same as educational expenditures and only half that figure on the health. Once again it would seem that Turkey is party to the traditional model of national security and had prioritized defense over education and health. This choice makes a striking statement about the Public Health case system in the country. Perhaps it is this lack of funding that is why certain problematic Public Health issue have yet to be addressed.

Preparedness as a national security tool

Another area which has a major effect on Public Health is the preparedness that a nation has with respect to natural disasters in terms of recovery time. The ability for a country to return to pre-disaster health standards and conditions speaks to the

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[14] "Economic Indicators for Turkey" *UNICEF Website*:
http://www.unicef.org/infobycountry/Turkey_statistics.html#69

efficacy of the Public Health system that is in place. Being able to deal with large scale economic, environmental and health disasters is one measure of a Public Health System. A poignant example in recent years is Hurricane Katrina in 2005 in the US. The hurricane was one of the worst in recorded history but what has been cited as the real disaster was the Public Health situation after the atmospheric event.

According to the NEJM, "the critical issues raised by Katrina's devastation are straight from the Public Health textbook: sanitation and hygiene, water safety, infection control, surveillance, immunizations, environmental health, and access to care."[15] The region as well as the nation was caught unprepared for the disaster and as a result the people of the Gulf Coast suffered greatly. Also the scope of the disaster was not totally realized by officials until long after the Public Health issues had compounded. The following is a list of the major Public Health concerns which plagued the area after the disaster. This list, from the Johns Hopkins Bloomberg School of Public Health is extensive but also may not be entirely complete:

- Population Displacement
- Drinking Water
- West Nile Virus
- Emotional Fallout
- Toxic Contaminants[16]

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[15] "Hurricane Katrina: Public Health Response: Assessing Needs". *New England Journal of Medicine,* October 13, 2005. http://www.nejm.org/doi/full/10.1056/NEJMp058238

16 **Katrina's Aftermath: Public Health Concerns," *Johns-Hopkins Bloomberg School of Public Health*, September 6, 2005. http://www.jhsph.edu/katrina/katrina_health.html**

These major problems were experienced by Gulf Coast residents. While only two of them are directly related to traditional health concerns, we can see once again how the scope of Public Health includes much more than mere health-related issues; encompassing social and emotional factors of the population as well. Just to elaborate on the first issues of Population Displacement we can see how complicated this problem became over the course of the delayed emergency response time as well as the poorly equipped Public Health service. According to the NEJM,

> The biggest health issue, however, was and will continue to be the inability of the displaced population to manage their chronic diseases. It remains uncertain how such a disruption of ongoing care will affect the long-term health of the population. Persons whose health depends on immediate medical care — hemodialysis, seizure prophylaxis, medications for diabetes or cardiac disease, or treatment regimens for HIV infection or tuberculosis — were and are at risk for potentially lethal exacerbations of disease. Those with special needs — hospice patients, the mentally and physically disabled, the elderly, and persons in detox programs — continue to endure life-or-death challenges beyond that of evacuation. Planning agencies are already struggling to build the sustainable procurement and distribution apparatus to address such long-term needs.[17]

Prior to the disaster, patients of chronic diseases were receiving care at their established Public Health centers. Yet when the services are taken away or literally removed by an atmospheric disaster, there needed to be a contingency plan in place for these individuals. While some were shipped to other states, many individuals had to make due with substandard care simply because the Public Health System was not adequately outfitted. Probably one of the most potent quotes by the NEJM about Katrina was, "a strong infrastructure is required to withstand such an onslaught. Katrina

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[17] "Hurricane Katrina: Public Health Response: Assessing Needs". *New England Journal of Medicine,* October 13, 2005. http://www.nejm.org/doi/full/10.1056/NEJMp058238

disproportionately affected the poorest residents of New Orleans, who did not have the health reserve or the access to care needed to absorb the blow of a breakdown of the local Public Health system. In the long run, the destruction of the Public Health and medical care infrastructure had the potential to be more devastating to the health of the population than the event itself."[18]

Conclusion:

In conclusion we can reiterate that Public Health is a vital part of the overall national security matrix. In recent years public officials have debated nearly all terms used in this paper. Yet what is undeniable is that a evolving relations between nations as well as new and more challenging Public Health issues are always on the horizon. What needs to be understood is how the all the complex subtopics related to Public Health are connected as well as their impact on the nation. As we have seen with the variety of cases presented in the paper, Norway, Haiti, the US and Turkey all have different concepts of Public Health. The most effective systems seem to take a more holistic approach and have prevention at the heart of their programs. By planning both financially as well as strategically, nations can help their population prevent as well as overcome serious challenges to Public Health.

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[18] "Hurricane Katrina: Public Health Response: Assessing Needs". *New England Journal of Medicine,* October 13, 2005. http://www.nejm.org/doi/full/10.1056/NEJMp058238