TEAM BIOCOUNTER

Bioweapon **I**nhibition **O**peration **CO**ntainment **U**nit for the **N**egation of **T**errorist **E**ntities and **R**adicals

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THE PROBLEM

In the modern day, advanced weaponry is becoming an ever-increasing threat across the world. According to the *World at Risk* report, it is more likely than not that a weapon of mass destruction will be used somewhere in the world by the end of 2013. We have found that the DC Metropolitan area lacks preparation for an aerosolized anthrax attack, an issue we have chosen to address in order to reduce contacts and casualties.

METHODOLOGY

To tackle this problem we have begun an investigation through Soft Systems Methodology. This has lead us to the:
- Investigation of and interviews with numerous agencies involved with the response process, represented through the graphs we have created
- Extensive literature review already completed on the topic, including previous preparation plans
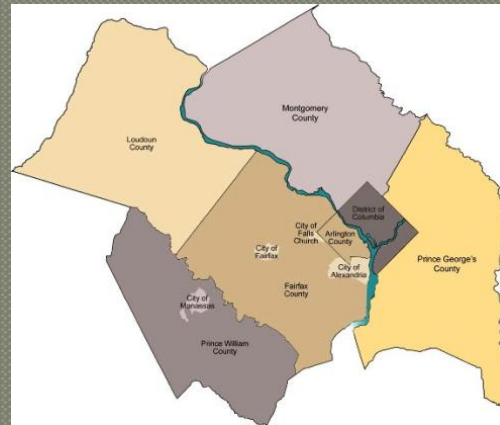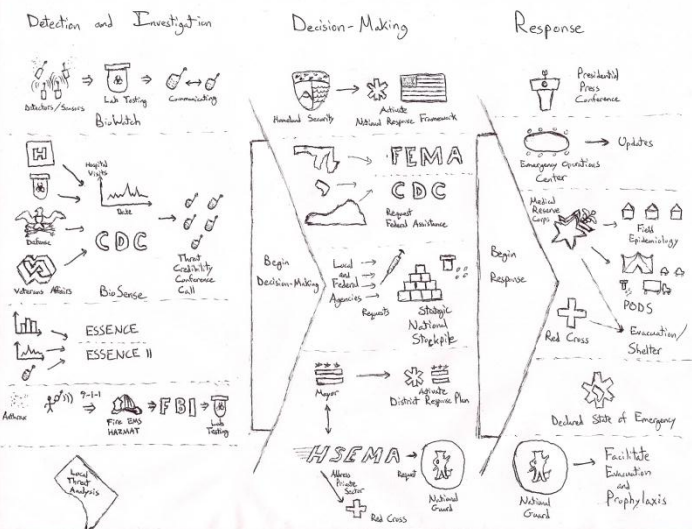- Use of computer program simulations to demonstrate the effects of an attack
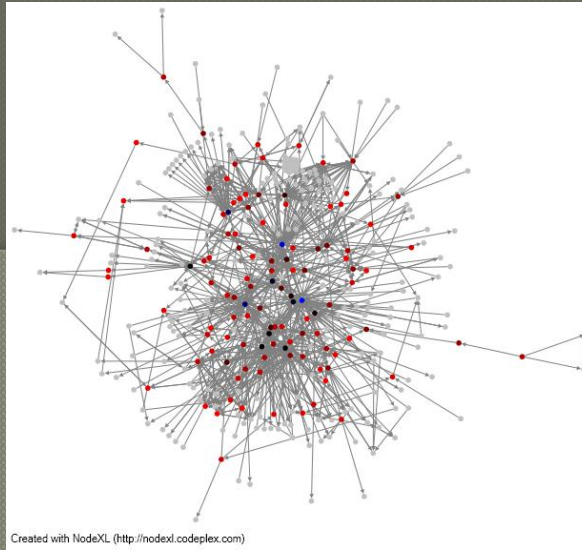
THE SOLUTION

What we have discovered is a large amount of discrepancy and overlap between the numerous agencies involved with the response process. From our research, we hope to discover ways that the response process can be optimized to prevent a more disastrous effect in the DC Metropolitan area. We aim to devise a plan that will work more efficiently, and we will be submitting these recommendations to agencies that are involved with the response process.

MODELS & SIMULATIONS

- HYSPLIT: Simulation that generates anthrax concentration data over a period of time and area
- Population Simulator: In-house Ruby program that takes in HYSPLIT data and calculate the number of individuals sick by using population data from US Gridded Census Data
- ArcGIS: Maps out data of sick per hour from simulation
- Rich Pictures: Net pictures made in yEd and NodeXL demonstrating the numerous connections between organizations

Created with NodeXL (http://nodexl.codeplex.com)

NodeXL Graph

DC Metropolitan Area

NOAA HYSPLIT MODEL
Concentration (mass/m3) averaged between 0 m and 10000 m
Integrated from 0600 10 Jan to 0700 10 Jan 10 (UTC)
SUM Release started at 0000 10 Jan 10 (UTC)

>1.0E-12 mass/m3
>1.0E-13 mass/m3
>1.0E-14 mass/m3
>1.0E-15 mass/m3
Maximum: 6.3E-14 (identified as a square)
Minimum: 1.0E-19

NAM METEOROLOGICAL DATA