

### III. SITUATION

#### A. Background

Influenza pandemics are inevitable but unpredictable and arrive with very little warning. Should an influenza pandemic virus again appear that behaves as the 1918 strain, even taking into account the advances in medicine since then, unparalleled tolls of illness and death would be expected. Air travel could hasten the spread of a new virus, and decrease the time available for implementing interventions. Outbreaks are expected to occur simultaneously throughout much of the U.S. preventing shifts in human and material resources that usually occur in response to other disasters. The effect of influenza on individual communities will be relatively prolonged (weeks to months) in comparison to other types of disasters. Healthcare systems could be rapidly overburdened, economies strained, and social order disrupted.

Depending on where the initial outbreak begins, the U.S. will have no lead time to a maximum of three months lead time. Two or more “waves” are anticipated, occurring within three to nine months of the initial outbreak in a given area. Historically speaking, it is expected that in any locality the length of each wave is approximately six to eight weeks. Based upon current vaccine production methods, vaccine may not be available in time for the first wave of illness, but may be available in time to mitigate the impact of the second wave, provided the virus strain has not “shifted” between waves.

#### B. Impact on NJ

##### 1. Geographic/demographic factors

NJ’s geographic and demographic characteristics make it particularly vulnerable to importation and spread of infectious diseases, including influenza.

NJ is the most densely populated state with a population of over 8.5 million people, including large populations of immigrants. Nearly half of NJ’s population lives in the urban/suburban areas of the northeastern third of the state near New York City.

NJ has more roadways per square mile of land than any other state and provides an important transportation route in the Washington, D.C. - Philadelphia - New York corridor with over 210 million vehicles traveling through this route per year.

Air traffic includes Newark Liberty International Airport, which provides transportation to over 31 million passengers per year, nationally and internationally, and is the busiest airport in the tri-state area. NJ is also a major ocean transport center with several major shipping yards.

There are over one half million commuters using the bridges, tunnels and train network systems connecting New York and NJ every day. Thousands of tourists visit Atlantic City's casinos and other NJ attractions each day.

## 2. Personnel

Depending on the severity of the disease, absenteeism is expected to reach 30%-50% in all sectors of the work force as the pandemic progresses. More specifically, widespread illness in communities will increase the likelihood of sudden and potentially significant shortages of personnel in sectors that provide critical community services (e.g., police, fire fighters, school staff, utility and transportation workers). In addition, shortages of health care workers are anticipated as they would be at higher risk of exposure and illness than the general population, which would further strain the health care system.

## 3. Hospitals

If a severe (1918-like) pandemic hits NJ, the impact on the healthcare system and the number of deaths are estimated as follows:

Illness	2,524,305 (30% of population)
Outpatient medical care	1,262,152 (50% of ill)
Hospitalization	277,668 (22% of outpatients)
ICU (Intensive Care Unit)	41,825 (15% of hospitalized patients)
Mechanical ventilation	20,825 (50% of ICU patients)
Deaths	50,486 (2% of ill)