1. **Establish an AHP Model**

To evaluate the proportion of medicines and drones which will be installed in the shipping container, we establish an AHP model which focus on the following three aspects:

1. **Minimum time to complete medical supply delivery.** Which is the time that we use all drones to deliver medicines to the five hospital without rest until all medicines are conveyed properly.
2. **Amount of medical supply.** Which are the days our medicines can support the five hospitals keep working properly. By some easy calculations we can get that we need 7 MED1, 2 MED2, 4 MED3 per day; thus, to keep hospitals working n days, the amount of medical supply should be n\*(7 MED1 + 2 MED2 + 4 MED3).
3. **Reconnaissance ability,** which measures the total reconnaissance ability under the situation we choose.
4. **The Reason why We Choose These Three Aspects**

Amount of the medical supply judges that how long can the hospitals keep working, which is important because people’s life is vital thing in the whole rescue activity.

We consider the minimum time to complete medical supply delivery for two reasons:

1. It ensures that the five hospitals have plenty medicines so that can help save people, and more medical supply at the beginning days in hospital can let the hospitals deal with some emergencies in reality (even though the medical demanded is given in the question).
2. It reflects the efficiency of the NGO; faster completion of the task means the organization can do more things with the same time. Time-cost is one thing we should consider.

(\*the time the drones’ cost on the detecting of roads we have not counted in because it is not so urgent a task; what’s more, detecting is much faster than restoring the roads.)

The problem requires us to detect roads as many as we can; thus, we choose reconnaissance ability as one of the factors we focus on.

**3.Weights of the Three Aspects**

**The main task is to bring the medicines to the hospitals, which relates to people’s life; thus, we regard it as the most important factor.**

**If we bring one Type B Drone (which can fly furthest) in each shipping container, we can attain the largest reconnaissance area; thus, more drones can only observe the road more frequent or faster but cannot expand the detectable area anymore. As a result, we give it the smallest proportion.**

**Minimum time to complete medical supply delivery.**

**0.2051**

**Amount of medical supply.**

**0.7167**

**Available reconnaissance area**

**0.0783**

**Through calculating the weights of three factors, we get that the consistency ratio is 0.0079.**