

## **GIS-based Analyses on the Accessibility to Health Care in the Case of Kanagawa Prefecture**

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There are 344 medical administrative areas to supply regional medical services in Japan as at 2015, because the medical law was established to correspond flexibly to the medical needs of each district. Unfortunately, in enacting the law for each Medical administrative area, the situation in each district was not taken into account. This has been due to the lack of clear criteria to evaluate what would be suitable Medical administrative areas. Therefore, most of the Medical administrative areas were demarcated according to the administrative districts, without taking into consideration the real situation in the district. In 2012, the government reported that the current Medical administrative area was not responding to natural and social conditions effectively. Currently, the government has initiated a discussion on developing a new methodology for dividing the country into Medical administrative areas.

The goal of the research was to verify how effective it would be to use GIS for improving the medical supply system. A medical map was made in order to make a detailed analysis of the several Medical administrative areas in Kanagawa prefecture. The medical map allows the development of a simulation map using GIS to find out clearly the areas that lack in medical facilities. In particular, the medical map can show how often patients are able to get medical services in daily life from the simulation map, by focusing on a big medical facilities (over 200 medical beds) within one Medical administrative area. When one goes to a hospital, one usually drives a car or walks to the hospital. In this case, we assume that 30 minutes to the hospital is an acceptable time for traveling to the hospital on a daily basis. In one of the medical maps discussed in the paper, it is noted that there are plans for a new hospital and new infrastructures (railroad and station) to be constructed in the district in the future. In the Medical administrative area of this region that was demarcated by the previous methodology, there was not enough support for people to access the medical service. However, our study shows that by constructing new infrastructures, the inhabitants of the area will have further access to medical care.

We succeeded in making a medical map that shows how accessibility to medical care within a particular area can be expanded with new infrastructure construction. The next step would be to contribute to the new No. 6<sup>th</sup> or No. 7<sup>th</sup> medical regional planning on medical policy. It is strongly believed that this method will become a pilot model to evaluate Medical administrative areas using GIS in the future.