

To Ensure the Optimal Placement of Medical Centers and Welfare Facilities, etc. in Support of Community Living

(Period of Study: From FY 2015 to FY 2017)

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1. Introduction

In order to create a centralized urban structure in which people from the child-raising generation to the elderly generation can walk in safety and security, it is required to optimally locate facilities and services that support community living, such as medical centers, welfare facilities, and life convenient facilities, (hereinafter referred to as “Community Living Support Functions”) by relocating them to a community hub area, including rebuilding them next to a public rental housing estate at the time of rebuilding.

We at the National Institute for Land and Infrastructure Management (NILIM) have engaged in the development of planning and evaluation technologies to support the optimal placement of Community Living Support Functions by estimating their capacity requirements and capacity shortfall chronologically and spatially based on the projection of future population and household structure trends.

In this paper, we would like to provide an outline of methods for forecasting the future demand for Community Living Support Functions that have been studied as part of the current technology development efforts.

2. Methods for Forecasting Future Demand for Community Living Support Functions

(1) Calculate the future population size and households and the future number of users

Estimate the future population size and the future number of households by age and gender in a unit of small municipality division (town, town district, and street) or in a mesh unit by using the cohort method, and estimate the future number of users chronologically based on the attributes of users of a variety of Community Living Support Functions, such as age (see Figure 1).

(2) Establish the sphere of use of existing facilities

Regarding medical centers (clinics), child-rearing support facilities (preschools, nurseries, etc.) and life convenient facilities (supermarkets, convenience stores,

etc.), as a general rule, locate them within walking distance. Regarding welfare facilities for the elderly, locate them in junior high school districts that are assumed as daily living areas under regional comprehensive care systems.

(3) Calculate the number of users within a sphere of use

Calculate the sum of the future number of users within a sphere of use in (1) and (2). If a unit of small municipality division or a mesh unit extends over multiple spheres of use, divide the relevant areas proportionally. It is assumed that supply will not be sufficient to satisfy the future number of users (future demand) outside the sphere of use of medical centers, child-rearing support facilities and life convenient facilities.

(4) Check the supportability in terms of the capacities of existing facilities.

Check whether the future number of users within each sphere of use calculated in (3) can be accommodated by the capacities of existing facilities (see Figure 2). Review the feasibility of introducing new facilities in areas where the future number of users may exceed the capacities of existing facilities.

3. In Closing

By using the above methods, it has become possible to estimate chronologically and spatially the capacity requirements and capacity shortfall of Community Living Support Functions. Going forward, we plan to develop a program to forecast the optimal placement of Community Living Support Functions, which enables us to visualize and carry out research activities consistently, ranging from the estimation of future population size in a small municipality division to the estimation of future demands for a variety of functions and the calculation of cost-effectiveness of introduction of new facilities, by studying methods for calculating the cost effectiveness of improvement, operation, etc., of Community Living Support Functions.

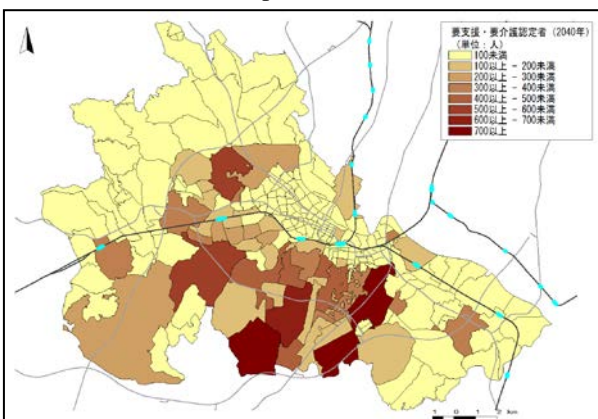


Figure 1. Example of estimated future number of people certified for support need/long-term care need (sum of all levels of nursing care needs)

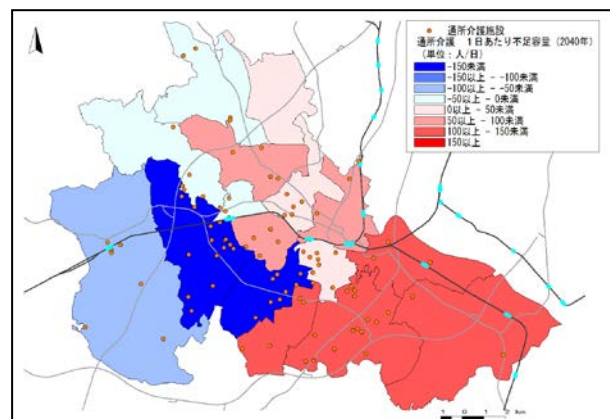


Figure 2. Example of estimated future shortfall in the capacity of home visiting nursing care services (daily shortfall)