News Release

HITACHI
Inspire the Next

First Joint Research Project by Hitachi and Dai-ichi Life Insurance Expanded Life Insurance Application Acceptance Criteria
Analysis of medical big data aids the prediction of hospitalization related to lifestyle diseases and the duration of hospitalization

Tokyo, August 31, 2017 --- Hitachi, Ltd. (TSE: 6501, "Hitachi") and The Dai-ichi Life Insurance Company, Limited ("Dai-ichi Life") today announced that they have developed a quantitative evaluation model to predict the possibility of hospitalization related to lifestyle diseases and the duration of hospitalization ("the Model")[*1] through joint research, aiming to apply medical big data[*2] to the life insurance business.

Dai-ichi Life started to review the insurance application acceptance criteria in July 2017 based on this model. Previous criteria prohibited customers from purchasing an insurance policy due to certain health conditions, such as lifestyle diseases, and/or Dai-ichi Life prohibited the addition of special riders indemnifying against eight lifestyle diseases[*3] even if customers were able to purchase an insurance policy. By reviewing the criteria, over 300 customers newly subscribed to insurance/special riders in one month after the revision.

This review of the inclusion criteria is one of the achievements of the analysis based on the medical big data of 10 million people accumulated by Dai-ichi Life and the analytical knowhow of Hitachi from its medical expense prediction technology[*4] in the joint research project that started in September 2016.

In the second joint research project in September 2017, the two companies will commence fundamental research focused on changes in the lifestyle and checkup results of individuals.

1. Efforts and achievements of the first joint research project (since September 2016)
There are a variety of multiple, complex factors that impair health. However, there were certain limitations to the analysis with the medical big data accumulated by Dai-ichi Life as well as conventional methodology when analysis was performed in consideration of the relationship among such factors.

The first joint research project led to the development of a quantitative evaluation model that estimated the possibility of hospitalization due to eight lifestyle diseases,

- more -

such as diabetes mellitus and cardiovascular disease, and the number of days of hospitalization using advanced analytical methods/knowhow owned by Hitachi. The model enables the prediction of the possibility of future hospitalization and the estimation of the number of days of hospitalization considering multiple, complex factors that impair health.

In addition, Dai-ichi Life revised the criteria to accept certain applicable customers because it confirmed that the difference from healthy people was small in terms of the possibility and duration of hospitalization, even if some health-impairing factors were present when the model was used for patients undergoing treatment for hypertension.

2. Theme of the second joint research project (since September 2017)
Dai-ichi Life and Hitachi will start the second joint research project in September 2017, using the knowledge obtained in the first project effectively.

＜Theme of joint research＞
Fundamental research focused on changes in the lifestyle and medical checkup results of individuals
Conventionally, an insurance company determines the acceptance of a customer based on the health status at the start ofthe policy. However, the possibility of future hospitalization/death depends on changes in the health status and/or lifestyle, even if the health status is the same at the start of the policy.
Therefore, the second joint research project is focused on changes in the health status and lifestyle in the fundamental research using Hitachi's analytical methods/knowhow to ensure more appropriate eligibility of the insured.

Through new joint research, Dai-ichi Life aims to innovate the life insurance business by contributing to the national issues of the extension of healthy life expectancy, the prevention of diseases/aggravation and the strengthening of health promotions as well as by enhancing support for the wellness of customers.

Hitachi will seek to gain deeper knowledge of the data and analytical methods specific to insurance companies, such as the acceptance of insurance applications, improve data science skills in the insurance business, disseminate outcomes of the first joint research project as a customer case of Lumada[5], the IoT platform, and promote the development/provision of innovative IT services through continued collaboration with a variety of stakeholders .

*1 It has been confirmed that the model secured constant accuracy in the verification of results of hospitalization period prediction using past hospitalization data. The error rate was 5% or less between the predicted number of days of hospitalization and the actual hospitalization duration in a certain group within five years after the start of the policy.

*2 Anonymized data was used to prevent personal identification.

*3 The eight lifestyle diseases are: hypertensive diseases, acute pancreatitis and other pancreatic diseases, diabetes mellitus, hepatic diseases, renal diseases, cardiovascular diseases, cerebrovascular diseases and malignant neoplasm.

*4 The technology for predicting the incidence of lifestyle disease and total medical expenses jointly developed with Hitachi Health Insurance Society. The development of the technology used the anonymized data of medical service fee statements and specific medical checkup results to prevent personal identification.

*5 The IoT platform that enables the development of IoT-related solutions and easy customization through a combination of IT and Operational Technology (OT) accumulated from Hitachi's wide range of business fields.

# # #