

October 29, 2024

Total Future Healthcare, Inc.  
e-solutions, Inc.  
YKK AP Inc.  
Daito Trust Construction Co.,Ltd.  
NTT DOCOMO Ventures, Inc. (DOCOMO Group)  
Chubu Electric Power Co., Inc.  
Keio University School of Medicine  
Vayyar Imaging Ltd.  
Binah.ai Ltd.  
PST Inc.

## Launch of Cross-Industry Platform for Social Implementation of Models for Early Detection of Urgent Events and Chronic Diseases

Total Future Healthcare, Inc. (“TFH”), a subsidiary of e-solutions, Inc. (“e-solutions”) has formed a capital and business alliance with YKK AP Inc. (“YKK AP”), Daito Trust Construction Co., Ltd. (“Daito Kentaku”), NTT DOCOMO Ventures, Inc. [1] (“DOCOMO Group”), and Chubu Electric Power Co., Inc. (“Chubu Electric Power”), to launch a cross-industry platform to work on the social implementation of models for the early detection of falls and other urgent events that occur in daily life spaces, as well as the early detection of disease risks such as dementia.

### 1. Background

With the aging of society and the increase in the number of single-person households, falls in living spaces are on the rise. Falls occur not only due to tripping and falling, but also due to impaired consciousness caused by stroke, myocardial infarction, and other diseases, as well as signs of physical and mental changes such as dementia and frailty syndrome, many of which occur in daily life spaces.

In addition, diseases such as dementia and diabetes, which progress slowly, tend to have low medical examination rate while the number of potential patients is large. For example, in Japan alone, there are 10,020,000 potential patients with dementia, including those with mild cognitive impairment (MCI) [2], but only 12% of them are examined [3].

Early detection of urgent events such as falls in living spaces and the risk of diseases such as dementia could contribute to the reduction of social costs, including medical and nursing care expense.

[1] Related news release: <https://www.nttdocomo-v.com/news/r83lvq6xgj/>

[2] the Ministry of Health, Labour and Welfare “Future Estimates of the Number and Prevalence of Elderly People with Dementia and Mild Cognitive Impairment (MCI).”

[3] The value TFH estimates from the Ministry of Health, Labour and Welfare's “2020 Patient Survey” (2020) of “vascular dementia and dementia of unknown details” and “Alzheimer's disease”. The calculations are based on the ratio of the number of patients with vascular and unspecified dementia and Alzheimer's disease to the total number of patients.

## 2. Early detection models

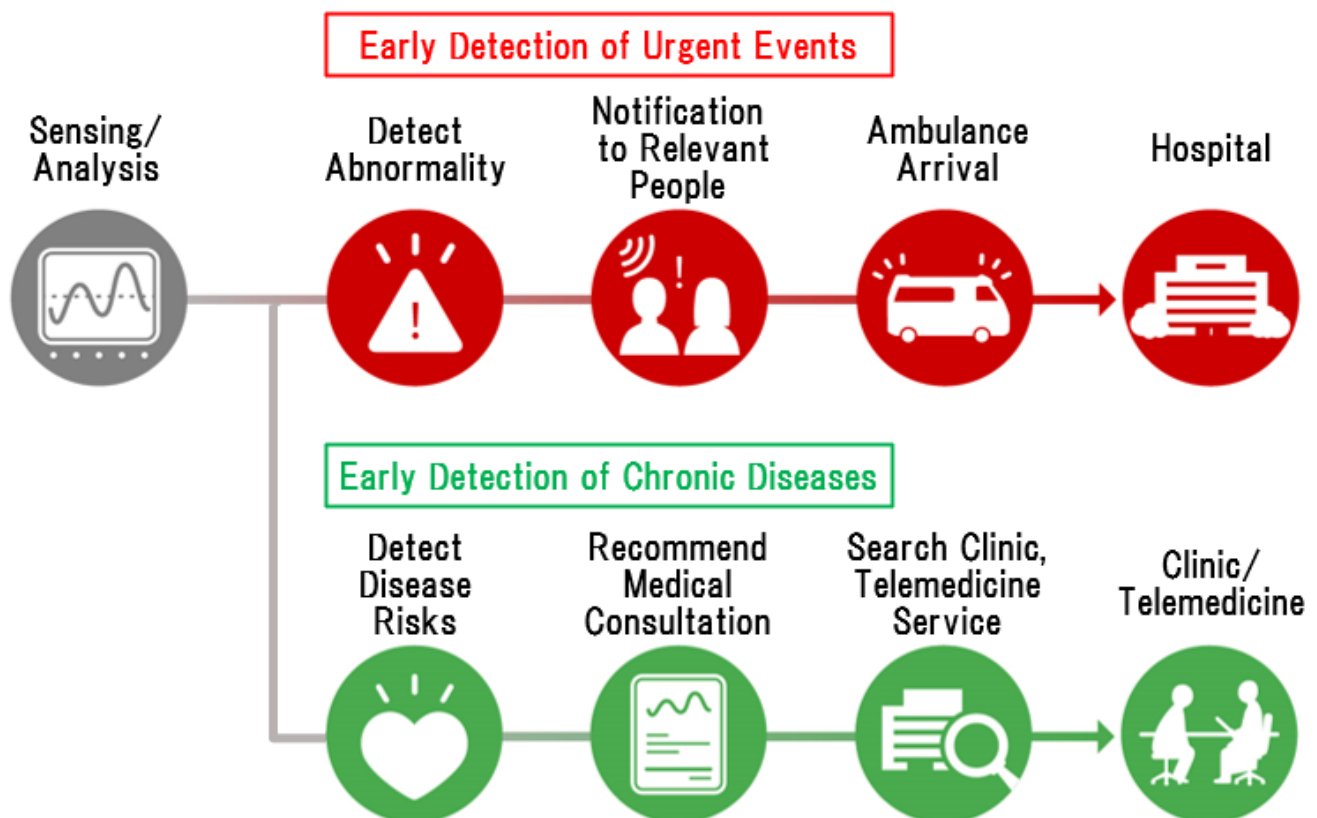
The models for early detection of urgent events and chronic diseases will be developed by TFH, which has priority rights for implementation in partnership with Vayyar Imaging Ltd. (“Vayyar”), Binah.ai Ltd (“Binah”), and PST Inc. (“PST”), which host cutting-edge technology in the world.

By installing non-contact sensing devices in living spaces such as residences and nursing homes, the early detection model monitors users' vital data and movements in a privacy-preserving manner.

When an urgent event is detected, family members, nursing staff, or the housing management company or partner security company are notified, and emergency services are called if necessary. (“Early Detection of Urgent Events” model)

When a disease risk is detected, the risk is fed back to the user, leading to a visit to a nearby clinic, partner hospital, or online medical care at the user's own discretion. (“Early Detection of Chronic Diseases” model)

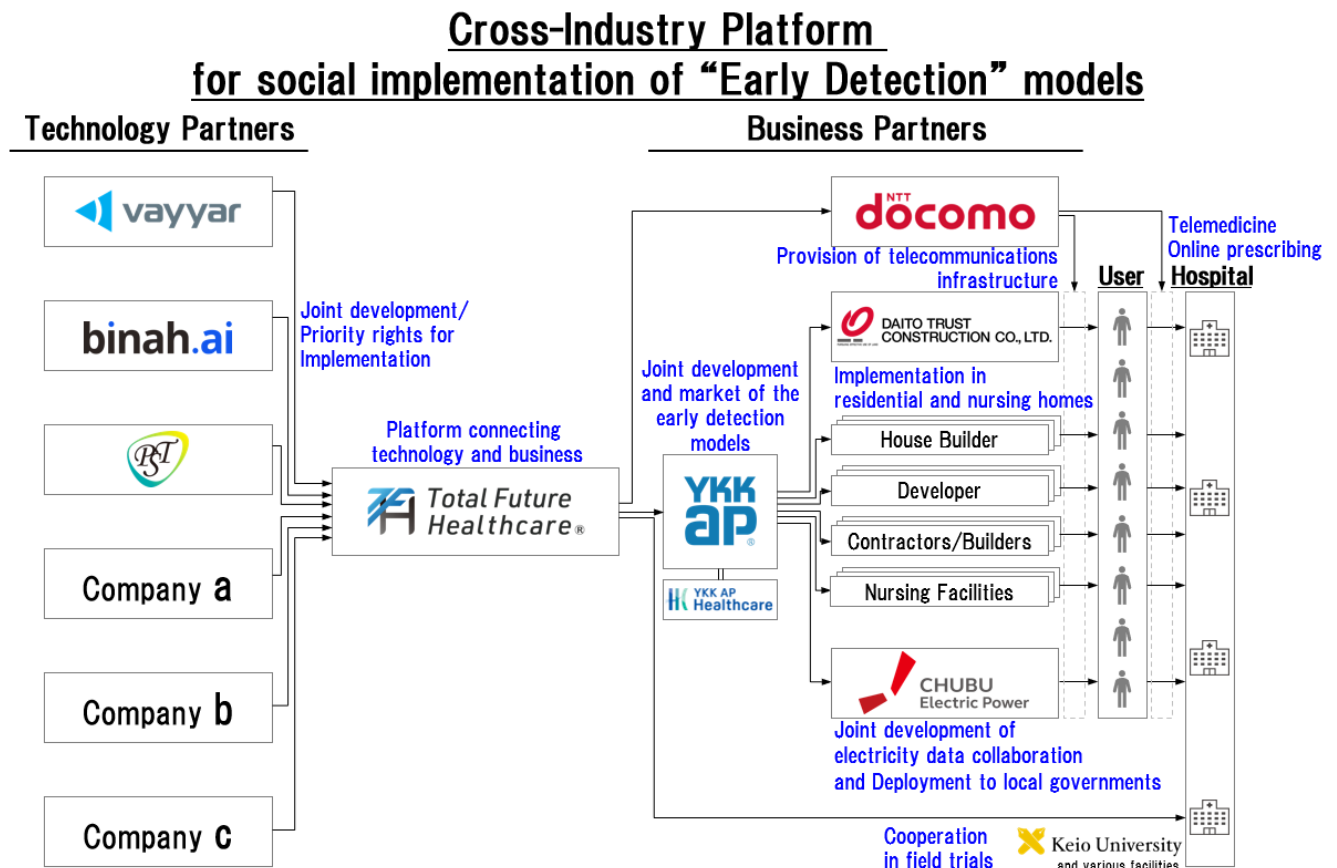
These models are being developed with the aim of screening in the healthcare field, rather than diagnosis.



### 3. Cross-Industry Platform

TFH will play the role of a platform connecting “Technology Partners” who hold cutting-edge technology and “Business Partners” who provide services to end-users, with each participating organization playing a role based on its own competence and existing business model. We aim for the social implementation of the “Early Detection of Urgent Events” and “Early Detection of Chronic Diseases” models in daily life spaces.

The number of “Technology Partners” is expected to increase in the future, including the three companies (and companies a through c) with which TFH is already in discussions for partnership.



Organizations	Example of the Roles
TFH	Planning and development of the early detection models, platform function to connect “Technology Partners” and “Business Partners”
<b>Business Partners</b>	
YKK AP	Joint development and market of the early detection models that leverages knowledge of construction materials and commercial distribution
Daito Kentaku	Implementation of early detection models in residential and nursing homes
DOCOMO	Provide telecommunications infrastructure, utilize health risk estimation AI, and link to telemedicine and online prescribing
Chubu Electric Power	Joint development of monitoring services for various diseases using electricity data, and field trials with local governments

<b>Field Trial Cooperating Institutions</b>	
Keio University School of Medicine	Cooperation in field trials at hospitals and nursing homes
<b>Technology Partners</b>	
Vayyar	Provision and joint development of the fall detection technology by millimeter wave radar
Binah	Provision and joint development of the vital measurement technology using pictures of face
PST	Provision and joint development of technology to detect risks of various diseases by voice

#### 4. Progress for Social Implementation

In order to optimize Vayyar's fall detection technology which has already been implemented overseas for Japanese market, TFH has initiated the technology verification at hospitals, nursing facilities, and residences (company dormitories) with the cooperation of Keio University School of Medicine, YKK AP, and so on.

TFH aims to introduce the first model of "Early Detection of Urgent Events" to the Japanese market in the fiscal year 2025.



Pictures: The fall detection sensor placed on the ceiling for the verification at nursing facilities

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## Contact

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■ **Total Future Healthcare, Inc.** (URL : <https://www.total-future-healthcare.com/en/>)

To realize the society that “Early Detection” keeps people healthy, we aim to build a platform to connect “Technology Partners,” who hold cutting-edge technology, and “Business Partners,” who provide services to end-users, for the social implementation of the early detection models of urgent events such as falls that occur in daily life spaces, as well as chronic diseases such as dementia.

■ **e-solutions, Inc.** (URL : <https://www.e-solutions.co.jp/>)

To achieve our mission, “Integrating Possibilities to Design the Future,” we aim to “produce businesses.” We support our client companies by combining the various possibilities of people, organizations, and technologies to create chemistry so that they can generate profits while at the same time solving social issues in Japan through their business activities.

■ **YKK AP Inc.** (URL : <https://www.ykkapglobal.com/en/>)

“We Build a Better Society Through Architectural Products.” We provide a variety of architectural products that respond to social needs and contribute to solving social issues, such as windows and doors that create safe, healthy, and comfortable living spaces and building facades that create beautiful urban landscapes. We are committed to an “integrated production system,” in which the company itself handles everything from materials, components, and production equipment to processing and assembly.

■ **Daito Trust Construction Co.,Ltd.** (URL : <https://www.kentaku.co.jp/corporate/en/>)

The Daito Group is engaged in a wide range of businesses centered on the construction and management of rental housing as well as peripheral businesses such as tenant recruitment, care and nursery, and energy. In our mid-term management plan, we focus on social issues such as population decline. We aim to support regional revitalization through our unique approach to town development, which connects facilities and services.

■ **NTT DOCOMO, INC.** (URL : <https://www.docomo.ne.jp/english/>)

NTT DOCOMO, Japan's leading mobile operator with over 90 million subscribers, is one of the global leaders in 3G, 4G and 5G mobile network technologies. Under the slogan “Changing worlds with you,” DOCOMO is actively collaborating with global partners to expand its business scope from mobile services to comprehensive solutions, aiming to deliver unsurpassed value and drive innovation in technology and communications, ultimately to support positive change and advancement in global society.

■ **Chubu Electric Power Co., Inc.** (URL : <https://www.chuden.co.jp/english/>)

The Chubu Electric Power Group aims for sustainable growth as a total energy service corporate group that is one step ahead by providing safe and stable energy of high quality with consideration for the environment as well as a new form of community through the establishment of community support infrastructures.

■ **Keio University School of Medicine** (URL : <https://www.med.keio.ac.jp/en/index.html>)

■ **Vayyar Imaging Ltd.** (URL : <https://vayyar.com/>)

We are an Israeli company that provides cutting-edge 4D imaging radar technology. Unlike cameras, radar sensors do not invade privacy and can protect people in sensitive locations such as bedrooms and restrooms, the company is expanding its business globally mainly in the elderly care and automotive sectors. Vayyar develops its own radar sensor HW and AI/ML SW that allows visualization of emergency events, solving social issues such as accident prevention and extending a healthy life expectancy.

■ **Binah.ai Ltd.** (URL : <https://www.binah.ai/>)

Binah.ai is a startup that uses the power of software to create a service that allows anyone, anywhere to easily check their health and wellness status using a camera-equipped device such as a smartphone or tablet. In addition to common indicators such as heart rate and stress, Binah.ai offers advanced measurement technologies such as blood pressure and hemoglobin A1c. Binah.ai is in the process of obtaining approval from the U.S. Food and Drug Administration (FDA) for future use in the medical field.

■ **PST Inc.** (URL : <https://www.medical-pst.com/en/>)

PST Inc. is a pioneering company that visualizes mental and physical conditions with its proprietary voice biomarker technology. Since its establishment in 2012, PST has developed language-independent voice analysis technology and brought innovation in a wide range of fields, from medical to healthcare. Our voice analysis platform, VOISLOG®, enables the evaluation of various health conditions and contributes to improving people's quality of life and extending healthy lifespans under our vision of "Resonant Voices, Spinning Societies."