

Nursing Care Helper Information Linkage System

1. Outline

1-1 Background

It is predicted that the number of people who require nursing care in Japan will increase by about 40% from 2020 to 2040. However, due to the country's declining working population, nursing care service companies are suffering serious labor shortages. To deal with this situation, there is a serious need to improve the efficiency of their operations.

For this reason, there is a trend among nursing care service companies to streamline their operations and make up for labor shortage by using ICT to computerize the conventional document-based information communication between helpers (nursing care helpers, who provide nursing care services to users) and managers (service directors, who give instructions and guidance to helpers).

Sumiden Communication Engineering Co., Ltd. has been involved in the nursing care service industry through the provision of the nursing care service billing system "Care Time," which calculates service charges based on helpers' service records and bills payers, for about 20 years.

We have recently developed a WEB system that can share data with the nursing care service billing system and started offering it to nursing care service companies as a subscription service. This system has been developed to improve the efficiency of the work of managers and helpers, enhance the emotional connection between them through real-time mutual information communication, and realize the desire of nursing care service companies to provide high-quality services to users.

1-2 Operations of nursing care service companies

Nursing care service companies provide their service under close communication between helpers and managers. Information from managers to helpers, such as service schedules, instructions, and other messages, and that from helpers to managers, such as service records and other reports, are communicated through documents. Therefore, input service records and other data recorded in the documents into the nursing care service billing system in order to calculate service charges and bill payers (Fig. 1). These tasks are concentrated at the beginning and end of the month, which places a greater burden on managers and helpers.

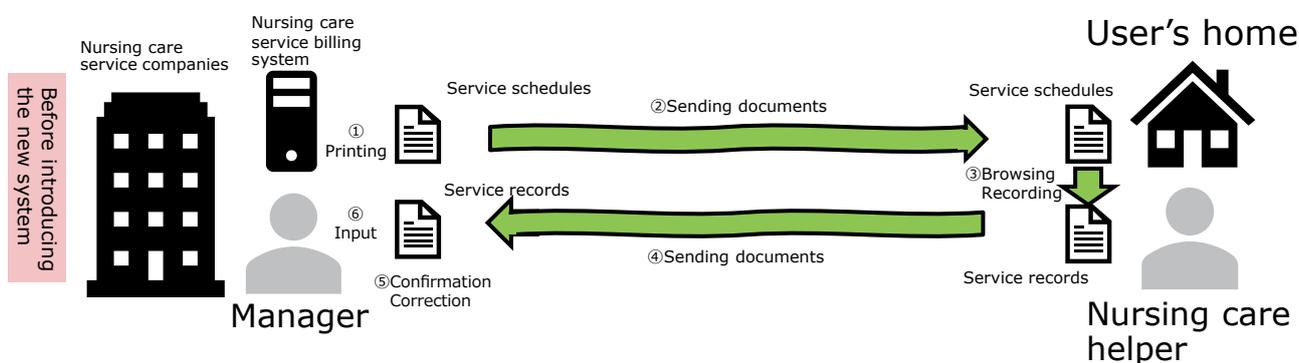


Fig. 1. Operation of nursing care companies (before introducing the new system)

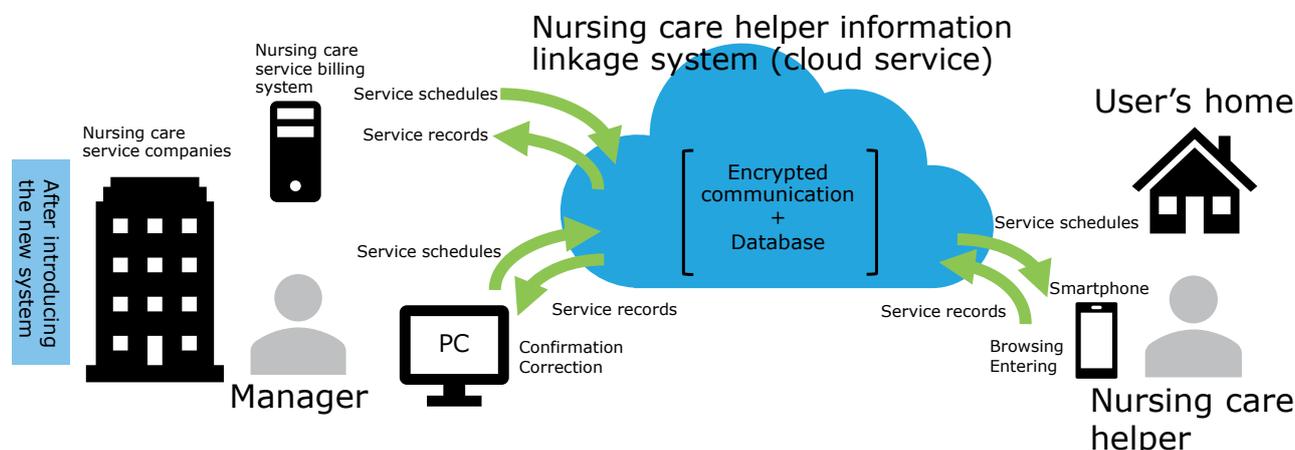


Fig. 2. Operation of nursing care companies (after introducing the new system)

1-3 Overview of the nursing care helper information linkage system

The nursing care helper information linkage system (hereinafter “this system”) enables managers and helpers to communicate information to each other in real time, which eliminates the need for them to print, send, and return documents and input data, as well as spreads their workloads evenly across the entire month. Since helpers’ service schedules and messages from managers are transferred from the nursing care service billing system to helpers’ smartphones as electronic data, helpers can view the information at any time and place. Also, service records and reports entered by helpers via text or voice are sent to managers’ PCs in real time. Managers can check helpers’ service records and reports and also edit (correct) them as necessary, and the information is incorporated into the nursing care service billing system (Fig. 2, Table 1).

Table 1. Operation of nursing care companies

Item	Specifications
PCs for managers	• Windows, Microsoft Edge
Terminals for helpers	• Android smartphones
Server	• Cloud server
Supported services	• Home-visit services covered by Long-Term Care Insurance • Home-visit services based on the Act on the Comprehensive Support for Persons with Disabilities • Home-visit services sponsored by city governments • Home-visit services provided as nursing care service companies’ own programs
Security	• Encrypted data transmission • Database encryption (user names, Service schedules, Service records, instructions and other messages, reports, and so on) • Certificate-based access control on PCs and smartphones
User identification	• QR Code (recognition of service start/finish time)
Data entry	• Text and voice

2. Features

2-1 Window configuration with simple operability

(1) Managers (PCs)

Managers can see helpers’ service schedules, whether helpers have viewed managers’ instructions and other messages, whether helpers started or finished their services, and whether there are any differences between their service schedules and actual results, all of which are displayed as a list on a PC. It is also possible to view and edit the details of individual service activities by clicking them on the list. Instead of using a multiple-window configuration with deep hierarchy levels as an interface to view and edit these many items, we adopted a simple single-window configuration with shallow hierarchy levels, which allows managers to view and edit them just by going back and forth between the list and the browsing/editing window.

(2) Helpers (smartphones)

The screen for helpers also has a simple design so that even those who are not very familiar with the operation of smartphones can easily operate the system. E-mail messages informing helpers of their service schedules are sent to their smartphones in advance, and they can view their own service schedules displayed on a list by tapping

the URL shown in the messages. By tapping a service activity shown on the list, they can see the schedule, relevant instructions and other messages from managers and enter relevant service records and reports. Instead of using a multiple-window configuration with deep hierarchy levels as an interface to view and enter these many items, we adopted a simple single-window configuration with shallow hierarchy levels, which allows helpers to view and enter data just by moving from the list to the browsing/entry window and scrolling up and down. This simple window configuration makes it a user-friendly system that helpers can operate easily without confusion.

2-2 Real-time information communication between managers and helpers

Since this system has a function to display the status of information communication between managers and helpers, managers can confirm in real time whether their instructions and messages have been read by helpers, whether helpers have started or finished their services, and whether there are any reports from helpers, and they can view the contents. Helpers can communicate the start/finish of their services and their reports to managers in real time.

These pieces of information can be immediately shared by all relevant managers and helpers through this computerized system and made use of to provide better service.

In addition, by minimizing the amount of transmitted data, we made it possible for nursing care service companies with a scale of 1,000 or more helpers to use this system.

2-3 Data linkage with the nursing care service billing system

Since this system and the nursing care service billing system “Care Time” share data, user names, service schedules, and other relevant information are transferred from Care Time to this system. Also, service records saved in this system are automatically transferred to Care Time, which eliminates the need for managers to enter service records for the month into Care Time at the beginning or end of every month.

Since this system has an interface for data linkage with a nursing care service billing system, it is possible to share data with billing systems provided by other companies by adjusting the interface.

Sumiden Communication Engineering will continue to support the efforts of nursing care service companies for their future development.

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