An individualized web-based information supply system for home oxygen therapy patients

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Abstract and Objective

The number of patients who require home oxygen therapy (HOT) is increasing in JAPAN. According to patient static data, there are large numbers of HOT patients in the patient who receives medical treatment at home. It is easy for them to repeat hospitalization and release. It is thought that the reason for one of the causes is that knowledge and coping process have not adhered to the body so that it is possible to correspond to an acute exacerbation appropriately. There are many systems that provide information to HOT patients, but they do not provide suitable information for patient's needs. The purpose of this study is to design an information supply system tailored to meet the specific needs of patients based on their individual conditions. From the perspective of evidence-based medicine, we built an information infrastructure to provide relevant information corresponding to data on individual patients. The system provides information in 11 categories and immediately displays suitable coping procedures for individual situations. The system also calculates Body Mass Index (BMI) and the quantity of oxygen they require, as well as determining the degree of urgency and the coping procedure.

Keywords:

Individualized information, Home oxygen therapy patients, Evidence-based medicine, Electronic health record, Personal health record

Methods

To identify individual needs, we extracted information service items from 11 reference documents. Furthermore, we conducted semi-structured interviews on what information should be provided for illness and daily life.

Using the results of the interviews, we developed an information supply system based on HOT patient's individual data. This system produces "HOT card information registration", "emergency contact information registration"," how to improvement shortness of breath information registration", "regional Patient Association registration", and five databases on the Patient Association Board. The services provided are patient daily life support and emergency response. The system instantly provides contact information and other related practice to check items in an emergency, suitable for individual patients, the family clinic, and for the oxygen equipment manufacturer. The contents of the information were evaluated to determine whether adequate information was provided for specific situations in patients with respiratory diseases.

Results

Information was provided in 11 categories: how to use the devices, cleanliness, diet, activities, excretion, pulmonary rehabilitation, coping strategies in case of an emergency, oral and inhaling administrations, responding to disasters, expectoration of sputum and networking.

We developed an information supply system titled "Should you go to hospital immediately?" that provides calculators for determining the amount of residual oxygen and BMI. This system is based on patient's individual data.

Conclusions

Compared to the traditional paper-based information, the proposed system is better at avoiding data being mislaid or lost, is easier to find information, and the information is specific to individual needs. In future, closer cooperation based on evidence-based medicine and electronic health records is required to provide more information adapted to individual needs.