Teamwork for Physical Therapists of Children

Proposal for Designfest problem at OOPSLA 2005

Abstract

The problem is to design a system that can help a small team of physical therapists that treat children, to communicate between team members, with doctors and with parents.
When treating children, continuity is very important, communication with parents plays a role, and the children themselves are often not able to participate in the planning and keeping track of treatment as an adult would do.

The first and most important requirement of the team of physical therapists is to have a system that would allow them to transfer work of one therapist to another (in case of absence or illness of a therapist) seamlessly to ensure continuity of the therapy. Since this would require already a fair amount of data about treatments for each child to be kept, the team would like to be able to put this data to additional use for communication with doctors and parents, and to keep appointment schedules.

Domain

Children that need physical therapy often have motorial handicaps and often need prolonged treatment.

Each therapist has the responsibility to keep track of treatment goals, appointments, progress and has to report to doctors and parents. Therapists work at the private homes of their patients or in small private practice locations.

Each child has a therapist that is primarily responsible for his/her treatment. If a therapist is ill or on vacation, the treatment must continue, therefore the therapists work in small teams and the replacing therapist must be informed about the appointments, and procedures for the child he/she has to treat.

Description of Desired Solution

The objective is to design a system that can replace the current paper-based system. It must be taken into account that not all therapist are computer literate and that some may only have a dial-up connection to the internet. It is not possible to install (expensive) software on their PC's, and the development costs must be low. In a later version the system should be accessible by parents and doctors also. This leads to the following set of requirements:

The solution should be a web-based system, requiring only a browser at the client PC.
Access to the system should be userid/password protected.
It is expected that documents will be kept in a database to allow for greater safety and security.

The documents will be created locally on the PC's of the therapists.
Finished documents will be put in the systems database in PDF format.
It is desirable to allow for searching within the documents, for example to retrieve the treatment history for a specific child, the list of children treated by a specific therapist, etc.
At the discretion of the therapist, it should be possible to encrypt data.
Each user should have access to those parts of the system that are applicable, considering his/her role and not more; for example:

- A therapist can see all data for his/her patients and the patients he/she is temporarily treating.
- Parent can see reports and appointments and other data upon request, only for their own child.
- Doctors can see progress data for their own patients.

It is expected that the system has an administrator interface where users can be created/updated with appropriate authorities.
Therapists must be able to enter name and address data for their patients, and upload reports.
A desirable feature is the availability of an appointment system. Maybe existing (open source) software can be used for this purpose.

Use Cases

1. An administrator adds a new therapist
   Essential personal data of each therapist must be kept in the system, like name, address, telephone number, email address.

2. An administrator adds a user to the system who is a parent

3. An administrator adds a user to the system who is a doctor

4. A therapist logs on and adds a new patient
   The therapist adds the essential data of the child and parents, and assigns him/herself as the primary responsible therapist. Treatment plans and first appointments are also added. It could be debated whether the therapist can also add the parents and doctors as users.

5. A therapist adds a new appointment or changes an existing one
   When the therapist has logged-in and asks to access the appointment system, a calendar is shown with an overview of existing appointments. The therapist can select an empty time slot and enter new data, or he/she can select an already taken time slot and change the contents.

6. A therapist enters goals, a treatment plan, or uploads a progress report
   The system presents specific forms for each item that the therapist wants to keep.

7. A therapist assigns a replacement therapist for a patient
   When a therapist needs to transfer the therapy of a certain child to another therapist, the new therapist is now marked as the responsible therapist for the child. An indication has to be kept whether the transfer is

temporary or permanent and the reason of the transfer.

8. A parent accesses the system to review the progress of a child.
    A parent logs in with user-id and password. The system knows for which child this user can access data and retrieves the requested reports.

9. A doctor accesses the system to review the progress of a child.
    A doctor logs in with user-id and password. The system knows for which children this user can access data and retrieves the requested reports.

10. Search and show the appointment history for a particular child.

The uses cases are not necessarily provided in order of priority. As discussed above, the greatest need is for a system that keeps data about treatment plans and progress reports, therefore the use cases that refer to these should be looked at first. It is however really hard for these therapists to tell what they want and need, because most of them have only limited computer experience, therefore they would like guidance in this area and be given ideas about what is possible.