Nightingale Application Prototype

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1   Introduction

Firecrest Systems was requested to suggest improvements to the way in which a patient's chemotherapy details are gathered and recorded within the oncology department of Palmerston North Hospital.

The project called 'Nightingale' would be an application that aids the doctor in recording details of each patient's treatment.   For the implementation of Nightingale to proceed, a prototype of the system was developed for the approval of a board of medical professionals within the hospital. The design and prototyping of the Nightingale application was the purpose of this project.

2   Objectives

The objective of the project was to create a method of collecting, storing, and presenting data collected from a patient and their treatments, by the doctor and their support staff, and to deliver the prototype and design for the solution.

The solution addressed the following issues:

Poor recording and tracking of:

- chemotherapy treatments
- dosage per patient
- required patient data per consultation
- blood trends and patient status
- historical patient data for comparison and review

Time management issues that would be minimized included:

- manually filling in sheets that are stored in files for each patient
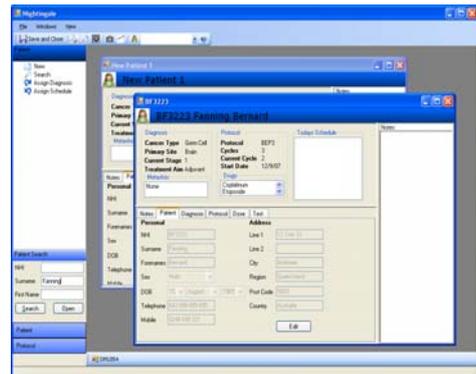- searching for records

3   Methods

- An ontology was developed after gaining understanding of chemotherapy treatment
- This was used to outline the data needed for recording and tracking the treatment, from which a class diagram was produced
- A tier diagram was constructed to outline how the user will access the data and to specify design architecture
- The interface was then designed to collect and display this data
- The design included both UML modeling and prototyping through Visual Studio C#

4   Results

Below is an example of some of the forms created for entering patient information. The prototype used a MDI (Multiple Document Interface) design, which is controlled by the side navigation panel and toolstrips.

All information regarding the patient or protocol is stored within the form, with a summary at the top for quick reference.

5   Conclusion

The prototype was delivered and received with high levels of enthusiasm from the doctors. It was able to give a good indication of how the application would help to solve all the issues presented.

From the completed design, Firecrest Systems was able to move into development of the final application. Many of the controls developed for the prototype are reusable, which allows for shortened development time and for a consistent look and feel for the application.