

University Of Wales Trinity Saint David
**BMDS 7006 Digital Technology in Health
and Social Care**
Autumn Semester 2022-23

**Case Study for Cohort 2 Week 5
Presentation**



Prifysgol Cymru
Y Drindod D
University of Wales
Trinity Saint David



Wales Institute of Digital Information
Athrofa Wybodaeth Ddigidol Cymru

Green Lane Dental Practice



Consultancy brief

You are members of a team of consultants and have been given the task of planning the systems of new patient management information system (PMIS) for Green Lane Dental Practice.

A feasibility study has already been carried out which showed that there was no suitable existing software on the market.

You are provided with a set of documents from the company. Some initial interviews have been carried out with various personnel involved with the company and the transcripts are available to you. Your brief is to use these documents to carry out a project planning exercise according to the additional instructions provided by the tutors. Note, that the client in this case has asked you to use a *waterfall* approach to IS development.

You are provided with various pieces of documentation, however, because you do not have access to the users you will have to make certain judgements based on your interpretation of the material. Try as far as possible to work to the information provided.

Brief Description

Green Lane Dental Surgery is a local dental practice in Lampeter, which consists of three dental surgeons, three dental nurses, two receptionists (one full-time, the other part-time) and a practice manager responsible for the financial side of the business. The following description outlines the basic operation of dental practice.

Green Lane's practice caters for both National Health Service patients and private patients. New patients to the practice make an initial appointment with reception, the details of which are recorded in the appointment diary. Existing patients are reminded every six months of the need to make an appointment for a check-up; the resultant appointment and any follow-up treatment appointments are also recorded in the appointment diary.

Patients arriving for treatment report to reception. The receptionist checks their details such as name, and address is up to date and the patient is then sent for treatment at the relevant surgery. Details of the treatment (work carried out, cost etc.) are recorded on the patient record card by the dental nurse.

At the end of the treatment, which might comprise several separate visits, both NHS and private patients are required to settle any outstanding payment due for the treatment. They are given a receipt for the payment made. The practice manager is responsible for paying all cash and cheques to the bank on a regular basis.

Dental nurses need to maintain adequate levels of consumables such as amalgam, injection needles etc. These are ordered from a variety of different suppliers one supplier may supply one or more products and a product can be supplied by one or more suppliers. When purchasing dental items, dentists have to be aware of the latest products available; they are constantly being sent new product information from suppliers.

Work on the manufacture or repair of dentures is subcontracted out to a specialist denture consultant after the dentist has taken an impression/diagnosed the problem. An order form is raised and a price is agreed upon for the work to be carried out.

There are also cases where the dentist must refer his/her patients to the Dental Hospital for specialist orthodontic treatment. In these cases, the patient is given an appointment request form which is signed by their dentist and the subsequent treatment is dealt with by a dentist at the Dental Hospital

The dentists are paid by the Department of Health according to the treatment that they have carried out and so they have to regularly submit details of the overall quantities/numbers of the various treatments carried out for NHS patients. This is dealt with by the practice manager and is done on a monthly basis.

The Green Lane Dental Surgery already uses a PC-based accounts package for the financial accounting tasks, they are now considering automating the system for ordering supplies and the patient records system.

Transcripts of Interviews with Personnel

Interview with Nasser Farimani - Dental Surgeon Interviewer: Judith Wilson

JW: You have expressed a need for this analysis exercise, could you outline your requirements a bit more fully?

NF: Yes, the practice partners have had several meetings over the past few months where we have considered the way in which we manage our information. We think that what we want is a patient management system that can also keep details of payments for treatment, as well as something to keep track of the orders we make for consumables.

JW: OK, perhaps you could describe the system as you see it, the problems that you think are arising with the current set up and any requirements you have for the new system.

NF: Our existing system isn't too bad, I think things run reasonably smoothly, but we do depend a lot upon paper-based records and we seem to spend an inordinate amount of time filing and searching for patient records, supplier names and addresses etc. We will have to keep some paper-based records for the moment because we need to keep things like x-rays somewhere. I think the biggest help would be when it comes to generating reminders, we could I'm sure readily automate that part of our operation. I might say from the outset that we have a reasonable financial package already on the computer and we are not looking to make any changes there. Kath will probably explain that to you, but what we want to improve is our patient and supplier side of things. I am open to persuasion about this, but our priorities are to keep things cheap, simple and easy to use. I suppose I see a system which can store patient details, the details of the treatments they have received and the payments they have made. I realise that nowadays we could automate all the practice details but I think we may want to start slowly and build up over the coming years.

JW: What about the appointment system?

NF: Well if that could be simply automated that would be good, so we could print out appointment schedules for each surgery. From our meeting, we decided that we would like to start with the patient records and then build from there, but if you have any interesting ideas we are prepared to try them if they don't cost too much and require too much in the way of change to our working practices. We cannot for example afford to take on any new staff to maintain a new system, it must be able to be used by the existing staff.

JW: OK, I may need to come back to you on a few points. What we will do initially is take a broad look at your information processing and then focus on the areas of most concern to you. It is likely that we will be able to present you with a couple of possible solutions.

NF: Thank you, I look forward to seeing them.

Interview with Clare Wilson - Dental Nurse Interviewer: Judith Wilson

JW: Can you describe your job, in particular how you use the records system? I'm not really interested in what you do when patients are being treated, but more about the things you have to do with patients and other sorts of information.

CW: The first thing I do is look on the patient list and then collect the record from the pile in reception. When a patient arrives whoever is in reception puts their record on the pile. Then we carry out the treatment and I write it onto the record card, calculate the costs and fill in a form for the NHS which the patient must sign to say that they had the treatment. Then I take the patient back to reception, give the paperwork to the receptionist and she deals with the payments or making further appointments etc.

JW: Is that everything you do?

CW: Yes with the patients. But we dental nurses have to keep the stock checked. Before every patient arrives we have to set out the instruments and make sure the syringes, anesthetics, needles etc. are all there. As we get things from stock we tick them off on the stock sheet and if levels reach a certain point then we make out an order request that we give to Kath and she makes out an order. For example, when we are down to the last two boxes of gloves we re-order again. The same goes for all the consumables.

JW: Are there any things about the current system that you think could be improved?

CW: Sometimes we lose patient records temporarily as they are misfiled, so it would be good for us to have access to the files on the computer. I've seen this in other practices. It means we could enter the treatments directly into the patient record and maybe the cost of the treatment could be worked out automatically, and even an invoice might be able to be printed, which would save time and be a lot more professional. Also, the supplier information could be automated, it would help because Kath is always asking us for code numbers for different types of amalgam etc. I think that's the only major thing that affect me, and stock isn't much of a problem.

JW: OK, that's great thanks.

Interview with Kath Jackson - Practice Manager Interviewer: Judith Wilson

JW: Kath, could you explain the functions you perform in the practice and highlight any areas where you perceive problems or could suggest improvements?

KJ: My role is to deal with the financial side of things. Salaries, payment of invoices, dealing with orders, keeping accounts, sorting out the tax details, dealing with and paying money into the bank etc. In general, dealing with the non-treatment side of the practice.

JW: Mr Farimani tells me that you have a financial information system in place.

KJ: Yes. It is quite comprehensive overall, but I do find I have to spend a lot of time searching for information for ad hoc reports and form lists of outstanding payments.

JW: Could you elaborate a bit further, please?

KJ: Yes, sometimes for planning purposes we need to gather information such as the number of treatments carried out over a given period, or the number of extractions carried out etc. This sort of information has to be searched for by retrieving all the relevant patient files from that period and manually searching or we have to keep separate lists or tallies of things like that. Hence we don't often do much in the way of statistics and planning work. Also searching for outstanding payments could be made easier if the patient records were in an electronic form and we could search for non-payment fields.

JW: What would you like to see in a new system

KJ: I think the main priorities are to get patient details, treatment details, payment details and things like supplier details onto a computer system so that we could do things such as generate letters more easily, send out appointment reminders etc. The main problems seem to be that we waste so much time searching for information or updating information in a paper form.

Transcript of interview with Jackie Howarth - Receptionist Interviewer: Judith Wilson

JW: Could you explain your role as the practice receptionist and the tasks you carry out? In particular the way you deal with new patients and the making of appointments etc.

JH: Well, most of my work concerns making appointments for patients and sorting out the patient records. Patients ring up or call in to make an appointment. We have an appointments diary in which we record all the forthcoming appointments for all three of the dentists. We also include in that diary any times when the dentists are not available, either because of holidays or for example Ms Walker works one afternoon a week at the Dental Hospital so we put that in the diary as well. When a new patient

wishes to make an appointment with us, I take their personal details and make out a record card for them. By personal details, I mean things like name, address, date of birth etc. I'll show you a record card if that helps.

JW: Thanks, that would be useful, can I take this away with me?

JH: Sure. When I've registered the patient details, I make them an appointment as usual. When a patient turns up for an appointment I cross them off in the diary.

JW: I notice you write in the diary in pencil, is that because you need to change things?

JH: Yes, sometimes patients cancel appointments, so we just erase the entry and we can use that slot for somebody else.

JW: The diary looks very full, are you busy?

JH: Yes very. Under normal circumstances, people usually have to wait about three weeks for a check-up. Especially people who want to come after school or work as they are our very busy times.

JW: Is that your main work then?

JH: No that's only part of it. I have to make out the day lists, that is the list of patients that each dentist is going to see in a surgery. I get out the patients files, ready for the nurses to record the treatments on, and I take payments for treatments. I used to do the check-up reminders as well. That means getting all the records out for patients due for six monthly check-ups and sending them a reminder, but that is done by Sheila who comes in on Thursday afternoon and Friday morning and does that. She also stands in for me when I'm on holiday.

JW: How do you do that, work out who is due a six monthly check-up?

JH: Oh, it's quite easy but a bit time-consuming. Each month has a colour, and when we put the record back we clip one of these coloured cards to the top of it. So we can get out all the records for a particular colour and send them a reminder. For instance, when Sheila comes in tomorrow she will be working on the reminders for November, and November is green, so she works through all the record cards with green clips and sends them a reminder. It works fairly well, but if somebody doesn't make an appointment, they stay green and so the next time they are called is the following November. I've mentioned this problem to the dentists and I think it would be a good idea for us to improve this system in some way. Taking payments is fairly straightforward, patients pay on completion of their treatment, and I record it on their card. Kath deals with all the NHS returns and accounts. We simply keep a record of who paid and how much they paid and make sure the treatment is marked paid on their record card. I think that's about it.

JH: Thanks, I may need to speak to you again to get further details.