

Burton Natural Community EHR

In today's high-tech society "*...it is unacceptable that personal medical histories are only properly available in office hours*"¹. In order to achieve the key objectives set in the "Information for Health" Strategy there must be 24 hour availability of current and historical clinical records.

Burton Natural Community asked CSW Health to help them take the initial steps towards achieving these objectives, by simulating the use of an Electronic Health Record (EHR) for various different user scenarios:

NHS Direct

- Identifying persistent callers
- Assessing a patient's summary history to provide more relevant advice
- Recording patient calls to NHS Direct

Community Nursing

- Providing more co-ordinated care
- Providing more appropriate care by a clear and reliable understanding of the patient's history
- Better audit and consequently service planning by understanding the relationships between nursing and other care

Emergency Ambulance Service

- Paging information such as allergies or alerts to ambulance crews
- More appropriate response to calls for patients with chest pains or an unconscious person e.g. if they are diabetic they may need their medicine rather than being taken to hospital

GP

- Providing immediate access to structured information from the GP practice - to benefit the patient, hospital and the GP

Out of Hours Service

The Out of Hours Co-operative, 'Burdoc' covers a wide patient base and so the GP is unlikely to know the patient. The user requirements here therefore includes:

- Access to the EHR via telephone line or via a mobile phone
- Up-to-date details of drugs, allergies, diagnoses, recent appointments and contact details

Acute Hospital Care

The main uses of the EHR for a hospital doctor would be in rapidly understanding the clinical history of:

- Unconscious patients
- Patients that have received care mainly outside of the doctor's hospital e.g. patients new to the local area

¹ "Information for Health - An Information Strategy for the modern NHS 1998-2005" by The NHS Executive, 1998

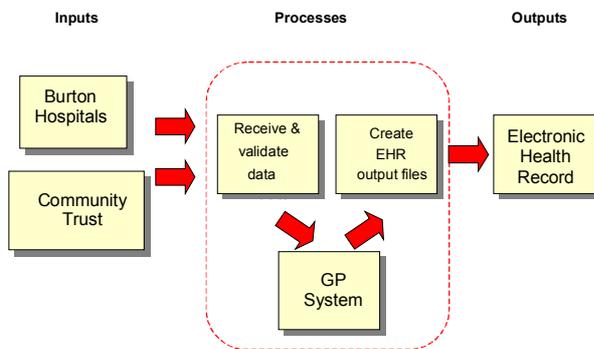
Proof of Concept

The purpose of the simulations was to:

- Gain a better understanding of the use of EHR by a broad cross section of health professionals
- Refine the information content of the EHR so that it meets perceived requirements
- Understand how the EHR might be used in relation to other systems and in relation to professional working practices
- Provide a 'proof of concept' prototype

The model adopted for the EHR is based on operational clinical communications being sent to the GP practice in an electronic form, with the GP acting as 'gatekeeper' of the information that is appropriate for inclusion in the EHR.

The EHR simulation can be simplified to the components shown below:



The EHR Prototype Architecture

CSW selected Tango Enterprise for its rapid application development features as the tool for this prototype EHR system. Tango can be combined with most standard web servers, and provides an integrated development environment (IDE) for

database driven, web browser-based applications.

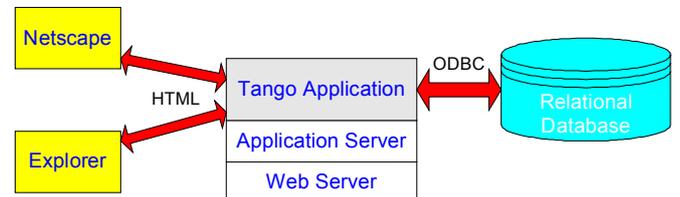


The prototype support *The EHR Prototype*

following components of EHR data:

- All health events (significant or otherwise) from the last 12 months
- All "significant" health events
- All health events associated with on-going conditions
- A Primary Care Clinical Summary
- Alerts and Allergies

Patient data is stored in relational database tables of health "events". Events are grouped according to their type (e.g. primary care, secondary care, community).



On receiving a search request from a client browser, the application developed by CSW interrogates the database and the results of the query are returned to the browser as a series of structured HTML pages.