

Volume 1 / Issue 3 2005 - Hospital IT Award

IT-Supported Discharge Management

Authors

Dr. Holger Pschichholz,

IT Department, University Hospital Freiburg

Agneseustraße 6-879106 Freiburg, Germany

Email: holger.pschichholz@uniklinik-freiburg.de

Dr. Johanna Feuchtinger

Quality and Development in Care, University Hospital Freiburg

Breisacherstraße 6279106 Freiburg, Germany

Email: johanna.feuchtinger@uniklinik-freiburg.de

Process optimisation for the after-care of inpatients at the University Hospital of Freiburg using an internally-developed IT system – winner of the IT concept of the year 2007

As inpatient stays become shorter, the organisation and co-ordination of discharges and the transfer of patients either to the home setting or to another healthcare institution have become key priorities. Discharge management at the University Hospital Freiburg is instigated by medical and nursing staff, while discharge services are delivered by internal discharge specialists, the so-called service providers: social workers, continuity of care staff, transition care staff and employees of Patientenring GmbH, a private company. Conventional communications using fax and paper are susceptible to error and are not best-suited to support the discharge process. The hospital's IT unit, in close collaboration with nursing management, developed an IT system known as ELMA which eliminates these weaknesses and delivers better services to patients. ELMA won the VHitG (Federation of IT Vendors for Health Services) award for IT Concept of the Year for 2007.

Starting Point

Controlled discharge has become a key element in the overall clinical care process since the introduction of a flat rate reimbursement system. In 2003, the University Hospital Freiburg developed a care structure based on the DNQP (German Network for Quality Development in Care) national expert standard in discharge management. The role of the discharge specialists who deliver the service is to organise post-inpatient care. Their main priorities are:

- P Care of oncological patients in the terminal phase.
- P Transfer to external outpatient care services.
- P Advice on social and welfare rights.
- P Assistance in applying for rehabilitation measures.
- P The organisation of other social services such as "meals on wheels" and the provision of medical aids and devices.

Every year, approximately 10,000 inpatient discharge requests are made in the hospital and the figure is rising. The service provider overseeing the discharge, the discharge manager, is the sole point of contact for the patient, physician, nursing staff and other service providers.

Conventional discharge management: an outline

The conventional process is characterised by the following steps:

1. Discharge request: A discharge request form is filled out by hand by a nurse or physician during the patient's hospital stay. The form is then sent by fax to the supervisor.

2. The supervisor contacts the patient on the ward.
3. Processing: The request is forwarded, again by fax, to the relevant service provider.
4. Processing: Joint execution of the discharge request with contact maintained by telephone in the period leading up to the scheduled discharge date.
5. Reporting: A fax is sent to the ward confirming that the requisite services have been provided. Weaknesses in conventional discharge management

A fault analysis of the process highlighted the following:

- P Organisation and documentation are characterised by a "paper muddle".
- P Weaknesses in data security.
- P Lack of system integration in the Hospital Information System (HIS) or the Electronic Patient Record (EPR).
- P Co-operation is hindered by telephone and fax use.

Objectives of IT-Supported Discharge Management

The existing process for managing inpatient discharges should be reproduced in the hospital information system using the IT system. The system should be developed for the "request", "processing" and "reporting" steps in the process using an iterative, use case approach. Weakness in the discharge process should be eliminated. Discharge management using ELMA The system developed by the IT department is called ELMA. The ELMA request module for the clinical workplace and the processing module for service providers have been successfully introduced throughout the hospital. The final module, ELMA reporting, is at the development stage and is set to go live at the beginning of June 2007.

The ELMA system is used by 2,900 nursing and medical staff and 30 service providers. The system characteristics include:

- P Seamless integration in the HIS and clinical workplace systems.
- P No local installation requirements - platform independence.
- P Low maintenance requirements: ELMA can be configured without programming.
- P Migration to structured XML documents within the electronic patient file at the reporting stage.

Results

The weaknesses in the conventional discharge management system are eliminated and all necessary steps are reproduced.

The iterative approach – incremental implementation of the system in independent modules rather than simultaneously

– proved to be the correct one. In June 2007, after roughly two and a half years in development, the University Hospital Freiburg will have an IT-supported, inpatient discharge management system delivering an optimal discharge process. The ELMA IT system will be fully integrated in the HIS, has low maintenance requirements and high stability and has gained wide acceptance among users. Overall, the discharge process has become faster and more transparent, standardised and documentation have improved, and it is easier to understand and manage. Monthly evaluations using the connected data warehouse provide a monitoring tool. The close link established between the ward workstations and the discharge management system enables patients to access timely information about what steps are being taken to discharge them, when they are being taken and by whom. The net investment in development before full implementation across the hospital is approximately 30 man-months. Experience to date suggests that maintenance requirements should not exceed one man-month per annum. Against this, the measurable benefits of the system include: a reduction of one minute in drawing up each discharge request on the ward and of five minutes in dealing with each request. Assuming an eight-hour working day, the quantitative gain in the case of a hospital with 10,000 discharge requests per annum is 125 working days.

Outlook

Plans are already afoot to use ELMA to improve discharge supports for outpatients. Patients who avail of hospital care in advance of an inpatient stay, for example those who visit the accident and emergency department, are of most interest in this regard as the period between being seen and admission as an inpatient can be used to process a possible discharge request. In terms of cross-sectoral medical care, the ELMA IT system will be opened up to facilitate direct co-operation with external service providers. Connections have already been established via a web service interface. It is also likely that the integrated registration of rehabilitation measures will come on stream within five years.

Summary

The introduction of a flat-rate payment system and the mounting cost pressures on inpatient hospital led to the development in 2003 of a discharge management system in the University Hospital Freiburg. This system supports the provision of appropriate services to improve the quality of life of patients following discharge from the hospital. At that time, this collaborative process was dealt with using handwritten forms and faxes. Following an analysis which highlighted flaws in the conventional system, it was decided to eliminate these defects by developing an IT-supported system. The system developed incorporated three software modules, all of which are integrated within the existing HIS and EPR: ELMA requests for the clinical workplace; ELMA processing for collaborative provision of the services requested; and ELMA reporting for reporting to the wards and patients on the services provided.

© For personal and private use only. Reproduction must be permitted by the copyright holder. Email to copyright@mindbyte.eu.

IT-supported, process-oriented implementation eliminates the flaws in the conventional system and optimises process quality. The positive benefits of the system as compared to investment requirements can be measured and quantified. The exemplary realisation of the project showed transferable innovation potential for other institutions of similar size. ELMA will be extended to other areas of activity, notably outpatient and cross-sectoral care.

Published on : Sat, 28 May 2005