Sharing information using a hospital information system

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Maidstone procured the First Data Precision Alternative HIS/OCS system, as part of a consortium set up with the objective of finding an incremental approach to HIS by building or interfacing with existing departmental systems, thus providing a pathway for sites with similar systems to follow. The HIS/OCS consortium comprises Mid-Kent Healthcare Trust in Maidstone and Birmingham Women's Healthcare Trust in South Birmingham. The First Data HIS system was endorsed by the HIS Central Team for procurement on a framework basis as a replacement order-communications solution for the IRC PAS.

This paper will provide a supplier and user's overview of exchanging patient information details across systems by interfacing the systems. It represents the practical experience of installing a new system and as such it outlines the problems encountered and the benefits achieved.

To-date we have procured and implemented the First Data Census Registration and Order Communications and Results Reporting Modules and the Contract Monitoring Module. We will shortly be implementing the Case Note Tracking System. We have also implemented five of the interfaces to the departmental systems.

The First Data HIS incorporates a standard interface mechanism in line with those currently under review by the Common PAS Interface Project Team, whose role it is to establish and recommend the UK standard for PAS. Maidstone worked with the supplier to modify the standard interface to fit local requirements. Generally this involved removing or adding individual data fields.

The transactions available from HIS to other systems are as follows:

- a pre-admission record;
- an inpatient/out-patient registration;
- biographical information;
- a cancelled admission;
- a new-born admission;
- patient information update;
- history number change;
- admission, discharge and data correction;
- in-patient discharge;
· ward, room or bed swap;
· in-patient to out-patient transfer;
· out-patient to in-patient transfer;
· a series patient discharge;
· a room, bed or ward transfer;
· patient leave of absence;
· cancelled discharge.

The functional design document for the interface systems should detail the required transactions that need to take place for the interface to work well. The training system should be the replica of the live environment for testing the interface and for the set up of the code tables and master files.

Master files are chronicle systems and special attention should be paid to the setting up and maintenance of these files. The main files, the speciality codes, consultant codes, general practitioner codes, ward and location codes. for the systems to share data these files must be kept consistent. From the central PAS System Administrator there should be control, ownership and understanding of these codes across systems hospital wide. Security and access to codes also needs to be controlled.

The department systems in Maidstone at present are: radiology, nursing, theatre management, maternity, a clinical information system, histopathology and pathology. We are currently procuring an accident and emergency system and an intensive therapy system.

The testing methodology that was used was processing of admissions, discharges and transfers, performed on the Precision Alternative using the Census Registration module. It is not a function of our interface to provide exchange of ATD information across the interface.

Admissions

We pre-admitted several test patients of each type. For example: emergency, waiting list, day case and new-born using different specialities. We admitted several of every patient type using difficult specialities. We confirmed that all data on patient details had been transferred as expected to third party systems. We admitted a patient already on the third party system but with a different name and the same medical number. We admitted a new-born baby first to the correct mother record, then to the wrong mother record to see how the third party system handled this. We admitted an out-patient, we confirmed the patient transactions on the third party systems.

Patient transfers

We performed room, bed and ward transfers and confirmed that location data had been transferred as expected to third party systems. We confirmed unchanged data was still unchanged on third party systems.

Information updates

We performed updates as specified on the test plan using several patients, changing all possible fields in various combinations. These transactions would include patient demographic data revision, discharge data correction, patient leave of absence and
patient/consultant change. We performed history number change on a selection of test patients and confirmed the data change from third party systems.

We used test plans for all of our interface testing. We had a standard for testing each interface with each third party system.

**Acceptance testing**

Once the specifications had been agreed by all parties concerned it was necessary to agree the acceptance testing plan, the testing environment and to assign responsibilities for the acceptance testing. The objectives of which were to confirm that all transactions documented in the First Data and third party systems could be successfully processed and to obtain approval that the interfaces met the agreed specification.

The prerequisites that we required from our own hospital were: a Hospital Third Party System Manager; a Supplier Third Party System Manager; a Technical Manager and a Hospital Network Specialist to be available as necessary. Our main supplier provided a Technical and Applications Specialist as required for the testing phase.

**Training**

We then moved on to training. Prior to the implementation in a live environment it was necessary to train staff in the use of the departmental systems. Hot keying between systems and changes in keyboard functionality, and to address issues relating to change management, particularly in the areas of resistance and aggression. This was particularly so with the nursing staff, not so much with departmental staff.

**Planning for implementation**

The go-live planning involved ensuring that adequate support was available both from the suppliers and from within the Trust. That from the Trust had to be available for 24 hours a day, seven days a week, which proved difficult as IT services were controlled by Facilities Management. That is one reason why I have had no holiday this year.

New policies and procedures had to be agreed, documented and distributed to all staff concerned. Priority had to be given to HIS down-time and the obtaining of hospital numbers for new babies. A help-line had to be established and staffed during peak hours. Back-ups of interface systems had to be synchronised and transactions had to be monitored for speed, filtering and data quality. Code tables had to be in sequence.

**The problems after the go-live stage.**

The problems we encountered were:

- additions to the master files;
- changes which were not identified to our suppliers of third party systems;
- on-site testing, particularly in relation to synchronisation of the network;
- identification of responsibilities, particularly when two suppliers and Facilities Management were involved;
- lack of support from third party suppliers, particularly over weekends and
bank holidays which led, in some cases, to a renegotiation of the contract for third party systems;
· data quality: obviously in allowing large staff groups to start inputting ATD information into the patient administration system data quality tended to drop;
· staff commitment and staff resistance;
· the Facilities Management versus an on-site help desk;
· inadequate monitoring facilities from some suppliers.

Benefits

The benefits we realised:

· timely patient information, entered once and then shared across all systems and available to staff with relevant access;
· a reduction in staff time as some statistics are now provided as a by-product of the interface;
· accurate contracting information which allows more effective contract monitoring;
· a single master patient-index;
· early introduction of staff to the system which will be useful with communications;
· more accurate bed information.

Conclusion

The early introduction of staff to the HIS has not reduced our training programme for the Order-Communication System but it will address the difficulties of implementing a new module and a new system. Staff throughout the Trust are now familiar with the HIS so, as that module comes on-line in February, we hope to have overcome a lot of the difficulties.