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ELECTRONIC COLLECTION OF PATHOLOGY CANCER DATA - THE WAY FORWARD?

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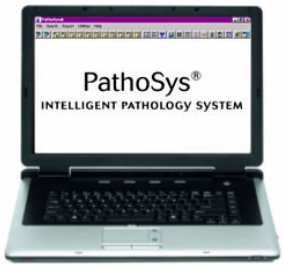
OBJECTIVE:
To develop a cancer data collection and reporting system for use by consultant histopathologists which would:

- Encourage compliance with National Minimum Datasets
- Automatically generate a text report for clinical users
- Store the data in a relational database
- Incorporate rule-based staging and coding systems
- Be capable of transferring selected datafields electronically to third parties e.g. Cancer Registries.
- Allow easy interrogation of the database.
- Comply with current data protection standards.



METHODS:
A consultant histopathologist (JBK) and a team of programmers led by a project manager (JEB) have developed a computer-based system to allow easy and rapid data entry, by consultant users, at the point of examination of the pathological specimen.

The programme has been designed to integrate with existing laboratory-based computers of a variety of different designs and ages.

The National Minimum Datasets for Pathology data (1) have formed the basis for the datafields incorporated together with a facility for users to include additional fields if required locally.

Each cancer site has required a specific module to be designed for collection of its dataset; to date the modules for colorectal, breast and lung cancers have been written. The colorectal cancer module is in use in a large clinical laboratory that receives a large number of specimens from the gastrointestinal tract.

The programme has been designed to automatically generate a text report for use by clinicians and to incorporate into the medical record.

Appropriate audit and security systems have been incorporated into the programme to comply with current data protection standards and best-practice for reporting of histopathology specimens.

Search facilities have been designed to allow users to easily and rapidly perform comprehensive analysis of the database for clinical audit or research purposes.

RESULTS:
The software has proved to be acceptable for use as a direct reporting tool by histopathologists in a busy routine practice. Data entry is facilitated by context sensitive systems and this allows for rapid entry.

The quality of reporting, based on the National Minimum Datasets, has improved.

User acceptability by clinical colleagues has been high, in particular the standardisation of reporting and the clarity of the information and report presentation has been widely welcomed.

Rule-based staging and coding has led to greater consistency in reporting of cancers.

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The search facilities have proved to be easy to use, flexible and to allow for considerable sophistication in data analysis.

A pilot study is planned for electronic transfer of pathology cancer data from the software system to the Trent Regional Cancer Registry.

The security systems incorporated in the programme have been found to be robust but flexible.

CONCLUSIONS:
Electronic data collection and reporting is a viable and valuable tool for the busy histopathologist. There are several advantages to the use of such a system, these can be summarised as follows:

- Ease of use by consultant users
- Standardisation of reported data and data presentation
- Improved compliance with National Minimum Datasets
- Improved consistency in coding and tumour staging
- Cost-effective, rapid and accurate data transfer to third parties.

We believe that the use of such computer-based systems for database reporting is a significant advance in the contribution of pathology to the wider cancer treatment team.

Ref: 1. Minimum Data Set for Colorectal Cancer Histological Reports - Royal College of Pathologists July 1998.

BRIEF BIOGRAPHY:
John Kershaw is a consultant histopathologist within Path Links. The Path Links organisation provides pathology services for the residents of Lincolnshire (approx 1 million) and the Lincoln laboratory deals with about 30,000 surgical specimens per year.

John Bird is a project manager for Advanced Expert Systems Ltd and has provided software knowledge for the programme development. Dr Kershaw and Mr Bird have been working on this programme for the last 18 months.