

MIDAS

Interpretive Software Cuts Reporting Turnaround Time



Author – Professor Christine Mingins

The Problem

Reporting Clinicians create diagnostic reports of illnesses or conditions based on their analysis of images such as x-rays, sonograms and electronic scans. An experienced Clinician can review images and dictate diagnostic reports for over 100 cases per day. After the medical typist generates a text report from the dictation, the Clinician reviews, finalises and approves it, then sends the report to the referring doctor. The transcription phase and then the reporting Clinician correcting the report can add considerably to the report turnaround time, resulting in unwanted delays for the referrer and patient and extra reviewing overheads for the Clinician. Dictation/Transcription costs are therefore a productivity drain on the business. As Imaging providers become more competitive with demand for faster turnaround and pressure on cost per case, dictation methods place practices at a

competitive disadvantage. Voice recognition software dispenses with the transcription costs but the self-correction of the report text can increase the Clinicians reporting time per study.

Structured Reporting

Practices are now considering replacing existing dictation methods with 'Structured Reporting'. Clinicians display and inspect images while creating diagnostic reports by assembling and customising partially prewritten and interconnected reports from a library of templates and macros. However, this approach is quite inflexible. The report format is fixed by the templates and the reporting Clinicians are often frustrated by the inability to customize the templates or incorporating higher order diagnostic observations based on the raw data in the report statements.

The Solution

MIDAS Interpretive Reporting Software

There is therefore an obvious need for a more intelligent 'interpretive' reporting solution that will assist the clinician to review images and data, make observations and apply diagnostic logic to auto-generate a draft/final report. MIDAS Software Solutions has been working with published standards as well as experts in the fields of Obstetrics, Vascular, Cardiology and Radiology to capture and encode evidence-based best practice and clinical knowledge for diagnosis and reporting. These knowledge bases are customisable to the needs of individual practices, without requiring the entire system to be updated.

The MIDAS Reporting System

– MIDAS can operate in stand-alone mode in a small practice or in server mode across a multi-site, multi-system network.

- MIDAS can be interfaced with DICOM Modality Worklist for patient management systems to feed patient demographics directly into the report or the patient data can be entered manually.
- MIDAS can be interfaced directly with a range of machines to automatically transfer images, measurement data and patient demographics using DICOM SR, or the technician/clinician can enter the data and observations manually.
- MIDAS provides diagram templates and electronic drawing tools for generating diagrams as an integral part of the final report where required. Photographs and images can also be uploaded and integrated into the report.
- Of particular interest in Vascular and Phlebology reporting is the ability to auto-populate diagrams with measurement data and diagnostic information, as well as auto-generating drawing elements on

MIDAS

Interpretive Software Cuts Reporting Turnaround Time



Author – Professor Christine Mingsins

diagrams as a result of applying the diagnostic rules to the measurement data.

- Reports can be generated in various formats including PDF, XML, Word etc and can be placed back into an existing PMS or in HL7 format for integrating back into HIS, RIS etc.

- All measurement data and reports are stored in the MIDAS database, facilitating comprehensive auditing and data mining by the users.
- The MIDAS diagnostic knowledge base and the report output can be viewed and validated by domain experts and customised for individual practices and/or individual clinicians.

MIDAS Benefits

- Improved workflow and communication Using MIDAS, Sonographers/Technicians obtain measurement data directly from the machines, add extra observations via the input screen (typically using a tablet device or PC) and apply the MIDAS diagnostic knowledgebase to generate a draft report. If a diagram is part of the study, an electronic diagram is also generated. The Sonographer/Technician can then edit the draft report and further annotate the diagram before marking the study as 'provisional'. Provisional studies immediately appear on the reporting clinician's worklist. The images and draft report are then reviewed, edited, and marked 'final', generating the final report complete with the reporting clinicians electronic signature.
- Improved productivity Reporting Clinicians and Sonographers/Technicians benefit from MIDAS. In 80-90% of studies undertaken, the Clinician will

make few if any modifications to the preliminary reports. Turnaround time can be measured in seconds, transcription and document scanning costs have been eliminated and reporting Clinicians are conservatively saving between one and two hours or more per day with the same case load.

- Improved quality MIDAS encourages the adoption of a standard set of 'best practice' reporting guidelines across an entire practice and supports the training of new Sonographers and reporting Clinicians as the practice expands. With full integration, there is very little manual transcription or data entry, lowering the risk of error and also lowering the risk of missing important data. All measurement data, observations and reports are stored electronically, facilitating auditing, analysis and reporting of the medical business.

MIDAS Reporting Modules Currently Available

Cardiology

Musculoskeletal

Obstetrics

Phlebology

Point of Care

Small Parts

Upper Abdominal

Ultrasound

Vascular