White Paper

Synoptic Reporting and Structured Data Capture

Business Case for Synoptic Reporting and Beyond

Introduction

The amount of clinically significant findings a surgical pathologist is expected to report continues to increase. Many clinicians see the need for a standardized terminology and pathology report structure in order to clearly and quickly recognize the most important findings in determining treatment. The synoptic report (a synopsis or summary) addresses these issues by providing a standardized nomenclature, a set of universally required findings, and a very consistent report structure. The emergence of synoptic reporting using published, peer-reviewed checklists is helping to standardize pathology reporting.

Anatomic pathology reporting is still largely narrative text. In contrast to clinical pathology and cytology, the handcrafted narratives of anatomical pathology are of diagnostic importance due to the unique set of events that surround each patient's case. With this in mind, any form of report standardization must not impede the pathologist's flexibility to offer individual diagnostic opinions on a case by case basis. Thus the ideal anatomic pathology report blends synoptic elements with narrative descriptions to provide the best assessment to the clinician. In this way, the clinician can find the most clinically significant elements immediately, but can still read the pathologist's opinion regarding ambiguities in the specimen.

Synoptic Reporting and Structured Data

Synoptic reporting goes hand-in-hand with structured data. Because you are constraining the report to individual data elements, it is possible for a computer to intelligently analyze individual elements for a variety of clinical and research purposes. However, not all synoptic reports contain structured data. Many are simply word processing documents that appear structured to human eyes. Thus, synoptic reports structure and clarify findings for clinicians, while structured data clarifies findings for computers.

There have been attempts to extract structured data from existing narrative pathology reports. Text parsing programs search through existing unstructured reports pulling out strings of text. Because parsing technology is imposed post facto, the process does not allow for quality control of data at the point of creation. Most importantly, natural language processing technology just isn't advanced enough to produce reliably, results without significant human intervention. Far better results are obtained by up-front capture of consistently structured data. In other words, by a human process of synoptic reporting translated into machine-readable structured data.

Data Entry Templates

With synoptic reporting, the pathologist completes prearranged data entry templates, often choosing from finite lists of options for consistency. Synoptic checklist reporting ensures quick, complete and concise documentation while decreasing questions from clinicians and cancer registers. It allows for accurate collection and comparison of cancer data which directly impacts cancer screening and treatment protocols. Any report that can consistently offer an interpreting clinician the same data information in the same format using medically consistent terminology has intangible benefits.

The difference between synoptic reporting and structured data is a source of constant confusion. Synoptic simply means to provide a summary of the pertinent findings. A synoptic report is capable of providing structured data sets that correspond to the synoptic elements. If it does, then it is also structured data in addition to a synoptic report. The difference may appear to be question of semantics, but is more importantly one of the usefulness of information. Text can be copied into a file which can be

parsed or mined for data elements but in an unstructured format it loses the power of a searchable database. Structured data by definition is information flowing into a database. Simply put, data has far more value than text in providing relevant, searchable information. Structured databases allow the task of data abstraction to be relegated to search queries rather than the manual task of report dissection and inspection in text driven systems. In these text systems, a certain percentage of the data is completely missed by text parsers. Structured data reporting carries the distinct advantage that 100 percent of data is captured and reported. Time and resources are saved and data integrity and patient safety are increased. Structured data reporting facilitates coordination of care and reduces the chance for medical/clerical errors.

The mTuitive Approach to Synoptic Reporting

Process Simplification

The mTuitive approach to synoptic reporting simplifies the process of transforming subjective, essay answers into objective multiple-choice, fill-in-the blank responses. The process results in the capture of structured data. Structured data is captured once and transferred to an unlimited number of disparate systems or databases, including, but not limited to, the surgical pathology system, the cancer registry and research databases. This is all done automatically and improves quality control over data entered by reducing costly and error prone practices of transcription and abstraction. The hospital embraces the efficiency improvement because it supplies the transcription service. The cost of transcription is exorbitant. The benefits are magnified when the process is extended to the cancer registry and research functions. The direct transfer of the pathologic data elements to disparate systems is not only far more efficient than current alternatives of manual abstraction or data mining, the results are far more accurate. Again, the hospital can eliminate the costs associated with data abstraction. The pathologist or physician receives far fewer inquiries to clarify the diagnosis.

Improved Efficiency

The system also improves billing and coding efficiency and accuracy by automatically assigning codes at the point of decision. The current process involves auto coding or manual assignment of codes by medical abstracters. Again, this is an error prone and costly practice for the hospital that is eliminated.

Many institutions, primarily teaching hospitals, have eliminated medical transcription to save money. The task of data entry has fallen to residents and staff pathologists. The younger, more computer literate pathologists are discovering that they can actually save time completing their own reports. Once mastering a brief learning curve, the "once and done" process that allows the pathologist to immediately view the report and sign the case out is a tremendous time saver. The efficiencies gained by avoiding the redundant editing and case re-examination process far outweigh any additional time involved in direct data entry.

mTuitive's solution is unique for several reasons. The application was designed by a pathologist who recognized that a physician will not be a slave to the computer. The pathologist will only use the computer if it improves the quality of performance while not sacrificing efficiency. The system has to improve the pathology work flow process or it will not be adopted by most practitioners. The system design focused on ease and flexibility of use and minimizing the effort to enter data. If this could not be accomplished, the benefits of synoptic reporting could not be achieved.

There are additional benefits to the clinician's workflow provided by the system. The application delivers context sensitive, point of care diagnostic reference materials which enhances the clinician's memory, reduces the repetition of facts, and saves trips to the bookshelf. It will prompt the user to complete all required data fields. Only the relevant question fields, based on information already entered, are delivered to the pathologist, further streamlining the workflow. Very little physician software training while fantastic improvements in physician productivity are achieved.

Single Step Sign Out

The major advantage to the pathologist is the single step sign out process or what we previously referred to as "once and done". This feature alone will save the pathologist time; preliminary studies have shown a minimum of a ten percent savings in editing and redundant slide handling. This is a hard dollar savings when one recognizes that the pathologist time equates to money.

Savings Identified

Subjective or "soft dollar" savings include:

- The avoidance of omissions; reports will be complete.
- The synoptic report will improve the communication with the surgical staff and will rapidly evolve to be the standard of practice as younger surgeons and pathologists come out of residency.
- The accreditation process for cancer centers does not demand synoptic reporting but does require that a surgical pathology report meet minimum requirements for the inclusion of standard data elements.

- The reporting turn-around time will be reduced.
- Coding for billing and compliance can be automated in the workflow; audit trails are a natural by-product.
- In a teaching environment the process is the perfect learning and monitoring tool.
- Direct data capture will improve the quality of data transferred to cancer registries, tissue banks, and research databases.

Hard dollar savings that will be gained by others, usually the hospital, include:

- Reduced cost of transcription
- Reduction and eventual elimination of data abstraction to populate cancer registries, not to mention the improvement in the quality of the data

- Improved reporting of critical clinical information
- Elimination of manual clinical coding such as SNOMED CT.

In Conclusion

Synoptic reporting and more importantly structured data capture are standards of practice that will not stop with pathology. The electronic health record of the future will be one requires structured data, not unstructured text. One has to look no further than decision of the Health and Human Services agreement with the College of American Pathologists to put SNOMED codes into the public domain as confirmation. Within a decade, Medicare will require claims submissions to include structured diagnostic data coded with SNOMED or a derivative. Even the federal government recognizes the benefits of synoptic, structured data.