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ChartWare® 32

Product Review

Purpose

To evaluate the compatibility of the ChartWare® physicians' software platform for:

- transition to a hospital or long-term care setting
- ability to customize
- ease of operation

Background

ChartWare® was developed in 1994 by Daniel Essin, MA, MD and David Tully-Smith, MD, PhD. After many years of manually charting patient-specific information, they determined that a more automated approach to this concept would measurably increase their productivity and efficiency. The objectives for an automated charting component were as follows:

- To allow physicians to manage their practice/clinic records at the point of care
- To provide electronic storage and rapid retrieval of patient clinical information, thus eliminating the need for excessive copying, physical storage space and filing
- To create and maintain accurate and legible medical charts and custom reports

Operating Modules

The current version of the software, called "ChartWare® 32", provides five tools:

Configuration Tool –The configuration tool is used primarily for setup and maintenance. It offers the user the ability to customize report design and printing options and to categorize patient episode encounters.

Vocabulary Tool - The vocabulary tool is the end users' "power tool." ChartWare® 32 has a comprehensive range of general and specialty vocabularies which can be copied and modified into a customized vocabulary to fit the user's clinically-based needs. Users create a customized lexicon of conditions and treatments for selection in the charting tool outline and then construct descriptive choices that can be dropped into a customized outline for clinical charting. The process of pointing and clicking on the pre-defined selections will increase efficiency and eliminate the tedious process of hand-written notes.

User Manager – The User Manager is the administrative control area for security. A partial configuration is established during the licensing process, but the end user will define detailed roles and assign security privileges independently for the individual practice/facility. Authorization privileges determine who may add information to a patient's chart, write prescriptions, view charts, enroll new patients into the system, or transcribe patient notes into a chart. Each user is given a log-on identification and password and specific privileges per their licensure limitations.

CPT and ICD for ChartWare® – This lexicon is provided through a license agreement with the American Medical Association, which owns the CPT lexicon and provides the ICD9 for convenience. It is integrated into the vocabulary database and utilized via the Vocabulary Tool described above.

Charting Tool – This is actually a set of applications that includes:

- Master Patient Index or Patient Select Tool
- ChartWare® Central, where the summary of the patient’s chart is provided in convenient form
- Note Generator, which is the clinician’s entry to the outlines and is the point where the actual charting is performed

After the customized preferences have been established in the vocabulary tool, the charting tool provides access to the patient chart and records the user’s selections into the chart for permanent record storage.

ChartWare®32 offers powerful optional clinical modules to enhance the basic charting package:

- “ChartWare®32 Drug Interaction Link to the Medical Letter Adverse Drug Interaction Program”
- “ChartWare®32 Imaging Module”
- “ChartWare®32 Launch Module”
- “ChartWare®32 Generic File Link Module”
- “ChartWare®32 Dictation/Transcription Module”
- “ChartWare®32 Document Destination Module.”

Patient Entry and Charting

After choosing a patient, the Professional Charting Tool opens to the ChartWare® Central screen, the “hub” for all patient charting. A user selects an existing chart or creates a new chart. Once the selected chart is opened, the screen presents the patient’s allergy and problem list, making the clinician immediately aware of important historical data. Additional tabs above the allergy list take the user to alternate chart areas (Family Information, Parameters, Notepad, Review, Chartfile, Problems, Reminders, Rx Meds, and the Charting Outline selected).

Charting Notes are created by opening a customized outline. The outline consists of major categories that expand to offer minor category choices. Charting is accomplished by pointing and clicking on pre-determined choices (defined in the Vocabulary Tool). Each field includes a blank, free-text field for comments unique to that charting episode. Note: Because manual typing slows the actual charting process; the more complete the vocabulary outline, the less free text will need to be added.

ChartWare®32 includes a “Preview Note” feature ensuring that the information selected during the charting process will not be saved without a review for accuracy. The clinician will proof the note for errors and make adjustments prior to permanently saving the note. If an error has

occurred, a correction feature is available and links the original note with the correction. The original note will not appear without the correction and vice versa.

The outline form uses a compressed view of the major categories with expansion capabilities for the minor categories. This reduces the amount of scrolling needed to locate the charting category on the screen. The screens are easy to read and follow a natural progression. Grid sheets provide an additional customization feature to be added for shift/daily documentation, i.e., MAR, TAR, CNA flowsheets.

Reports

Additional standard query and report-writing software, i.e., Crystal Reports, can be added to generate custom reports for clinical review of Quality Indicators and Quality Assurance or any other required information. One of the most exciting capabilities is customization of the vocabulary outlines to create Care Plans directly from nursing chart entries and to document actual interventions for MDS purposes.

Training

The end user will usually become proficient with the vocabulary creation tool after approximately 12-14 hours of training. ChartWare[®]32 offers weekend training classes or separate videos with step by step “live” training. Users may train independently or in groups. Only two or three staff members require the extensive training to be able to customize the charting outline tool for individual facility needs.

Training line staff for proficient use of ChartWare[®]32 depends on their level of documentation responsibilities and the customization quality of the outline that has been established for them. A general use overview could reasonably take only 15-30 minutes

Coding and Billing

An ICD-9 Code Library is attached to the physicians’ diagnoses. When the clinician adds a diagnosis to the diagnosis listing, an ICD-9 code is automatically attached for accurate billing purposes.

Coding of services is included to allow the physician to select the appropriate level of care provided and attach relevant documentation to justify the level of service billed, thereby reducing the number of rejected claims. Better documentation also means that claims can sometimes be reimbursed at higher CPT levels, thereby increasing revenue.

Compatibility

ChartWare[®]32 uses standard Windows platforms. It is also compatible with other PC programs from Microsoft, Lotus, Novell, etc., and most popular practice management software. It works well in all Windows network environments including wireless networks. Reports can be generated using standard industry query or report-writing tools such as Crystal Reports Professional and similar products. Support for MS Access, MS SQL Server and ORACLE[®] are built in. (Future versions will no longer offer the option of using an Access database but will continue to support the use of Access as a reporting tool.)

XML

ChartWare[®] was designed around XML from the ground up. The first version of the product anticipated the impending worldwide standardization on XML as a means of packaging information that promotes interchange, reuse and data retrieval. The founders of ChartWare[®] were instrumental in bringing XML to the attention of the healthcare industry; the industry standard's group, HL7, has embraced XML and incorporated it into a number of existing and forthcoming standards.

The use of XML facilitates the use of ChartWare[®] in multi-specialty and multi-disciplinary settings (such as long-term health care) where most of the care is provided (and most of the documentation is created) by providers whose needs are not considered to be "in the mainstream" by the EMR industry. Notes can be added to the patient's record by any and all providers (regardless of specialty) and the entire chart can be "read" in its entirety in a chronological or specialty-specific mode without requiring any customization of the core product. As users add content to the record, it automatically becomes viewable and processable by any authorized person or process.

Support Services

ChartWare[®]32 provides an independent deployment guide for end users to install or, if preferred, support services to assist with installation and problem solving for the inexperienced users via email and phone.

Usability

- Flat User Interface allows easy navigation to any part of the outline.
- Information can be recorded as it is presented in the course of an exam instead of after completion of the exam in a rigid, structured manner.
- This product is very solid. Crashes have been non-existent in our experience on different operating systems used for demonstration and setup.

Flexibility

- ChartWare[®]32 is completely customizable. Set up anything you want, the way you want it.
- ChartWare[®]32 accommodates both "lumpers" and "splitters." This means charting can range from simple to detailed depending on the provider's unique charting style, as well as clinical, administrative or legal requirements.
- Open Architecture allows integration and analysis using industry standard software

Overall Impression

ChartWare[®]32 is the best overall platform for EMR due to its:

- Versatility of customization. Outlines can be established to document any type of medical record/assessment/plan/intervention/etc.
- Rapid charting entries made at point of care, dramatically reducing charting time (2-3 minutes is the average over thousands of clinical encounters for most clinical specialties with a range from 15 seconds for brief documents to 5-6 minutes or so for complex, complete exams)
- Immediate access to the patient's records including the Internet

- Effortless copy and transfer of records (no photocopying of paper charts)
- Secure data storage and reduction of paper records
- Interface with most medical practice management, laboratory systems and reporting tools
- Wired or wireless network technology provides multiple choices of data entry tools, i.e., stationary terminal, laptop, PDA, Computer Tablet for point/click charting, voice recognition and handwriting recognition
- Return of investment which typically begins immediately with full ROI achieved within 6-12 months due to time saved on documentation tasks
- Decreased or nearly eliminated transcription costs

Additional Thoughts

- This product, and others like it, will have a dramatic impact on the LTC industry.
- Like it or not, it is likely that increasing government regulations in the coming years will force LTC providers down this path.
- Early adopters will experience the benefits and be well positioned to deal with new regulations.
- Early adopters will be more competitive and reap the benefits long before less savvy operators are forced into doing it.

Contents of LTC Vocabulary To-Date:

The long term care vocabulary has been constructed to allow for ease and simplicity of entry for busy long term care professionals but provides the depth necessary to monitor and record residents' conditions and indicators. The "Nursing Admission Assessment" is actually a composite of multiple smaller assessments, all of which are typically handwritten at point of intake or within 24 hours of admission to establish baseline information about the resident. The built-in MDS questions and associated responses can be exported to any software application.

For the user who would rather see the Nursing Admission Assessment contain only core elements, it can be broken into subsets. These smaller, focused assessments can be completed without compromise to current admission processing flow. Of course, every question and response within the assessments allows for free-form entries.

Nursing Admission Assessment

- Admitting Diagnoses
- Allergies, History of Allergies
- Arrival Information
- Vital Signs
- Participation in Assessment
- Cognitive/Neurological Assessment
 - Perception/Sensory
 - Pupils
 - Cognitive Skills (MDS)
 - Neurological

- Communication Assessment
 - Hearing (MDS)
 - Speech (MDS)
- Vision (MDS)
- Mood Assessment (MDS)
- Behavior Assessment (MDS)
- Functional Assessment (MDS)
- ADL Assessment (MDS)
- GU Assessment
- GU Additional Information
- Pain Assessment
- Fall Risk Assessment
- Oral/Nutritional Status (MDS)
- Special TX/Procedures (MDS)
- Skin Assessment
- Skin Ulcers Assessment
- AIMS Assessment
- Braden Scale
- Side Rail Assessment (Example A)

Nursing Diagnosis Based Care Plan Library

A NANDA library of RAP-based condition, goal, and intervention items is available for completion and update of Care Plans. The comprehensive range of selections for each elemental component of a problem, goal and intervention statement allows for point and click selection of care planning items that are tailored to a specific resident. In addition, the ease of use in updating Care Plan contents to needed modifications eases the update task and allows the change to be picked up immediately in the charting area so that staff are instantly aware of alterations as they use the system for flow charting and task-related activities.

Comfort Measures Care Plan

This component provides a custom Care Plan as an example of specialized areas that can easily be added in ChartWare. This is provided for hospice residents or those in need of special considerations.

Siderail Assessment (Example B)

This is another example of a Siderail Assessment that is provided with the library. The “Nursing Admission Assessment” can act as a “one-stop shop” for initial resident information gathering. One can see in this particular assessment how single segments of the “Nursing Admission Assessment” could be broken out. If the goal is to narrow the size and scope of each assessment and utilize a series of specialized assessments, this is easily accomplished with only minor modifications to the vocabulary.

Routine Charting and Documentation Section

Daily, weekly, and routine charting against the information gathered from your assessments, Care Plan, or standards for routine documentation are done in this area. This vast task, of routine/daily/q shift documentation and charting is where the provider will realize the bulk of the time savings, increased consistency and compliance in documentation, and improvement in chart

records due to legibility and speed of entry/use. The format is aligned with the Assessment and Care Plan contents provided in the basic vocabulary.

Outgoing Phone Call and Message Tracking

This component eases the burden of routine documentation and tracking of the many outgoing nursing phone calls made. It provides fast, accurate recording of:

- who was called
- for what reason
- at which contact phone number
- who was reached at the destination number
- display of resident vitals and weights (Since the doctor usually asks for this information, it is presented in this outline to further ease this task)
- resident's chief complaint that necessitated the outgoing call
- allergy history, and current medications

This area is extremely well-received by the nurses who must frequently act as secretaries and record phone calls in the chart, on scraps of paper, or at the bottom of an existing record. It removes the searching and frantic capture of information from the chart and provides a clean, legible record of each call.

Contributors

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Chartware Customers Interviewed

Peter Franklin, M.D. (Ohio); Cecil George, M.D. (Texas); Timothy Malling, M.D. (Minnesota); Jack Devine, M.D. (Pennsylvania); Ernesto Espinosa, M.D. (California); William Marsh, M.D. (Arizona); Jane Winston, M.D. (Arizona); Janis Johnson, M.D. (Florida)