Omaha System: Coded Data That Describe Patient Care

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Electronic records are introducing HIM professionals to new coding schemas. One is the Omaha System, used by a variety of caregivers including nurses.

Every day HIM professionals work with coded data. Most commonly these include ICD-9-CM and CPT codes. With the development of a full electronic health record (EHR), they will come into contact with additional coding schemas available to clinicians to describe patient care. An example of this is the Omaha System. The Omaha System provides a structured approach to document patient problems, multidisciplinary interventions, and outcomes at the point of care.

The Omaha System is a research-based taxonomy (classification) designed to enhance practice, documentation, and information management across settings. HIM professionals may encounter the Omaha System in home care, hospice, long-term care and assisted living, public health,

schools, chronic illness hospitals, and hospital-based and other case-management settings.

Users include nurses, physicians, occupational therapists, physical therapists, registered dieticians, recreational therapists, speech and language pathologists, and social workers.

When multidisciplinary health teams use the Omaha System accurately and consistently, they have an effective basis for documentation, communication, coordination of care, and outcome measurement.

Omaha System Overview

The Omaha System consists of three components that offer a relational, reliable, and valid structure and set of terms that can link clinical data to demographic, financial, administrative, and staffing data.

Components	Terms	Purpose
Problem Classification Scheme	• 4 domains • 42 problems • 2 sets of modifiers • Clusters of problem specific signs/symptoms	Organize assessment (needs and strengths) for individuals, families, and communities
Intervention Scheme	• 4 categories • 75 targets and 1 other • Client-specific information	Organize multidisciplinary practitioners' care plans and the services they deliver

Problem Rating Scale for Outcomes	• 3 concepts • 5-point Likert-type scale	Evaluate individual, family, or community change over time

A full description of the components is available online at www.omahasystem.org.

Bringing IT to Bear on Key HIM Functions

Increasingly, entries in contemporary EHRs consist of structured text intended to promote interoperability, the ability to exchange coded data among computerized documentation systems. Structured clinical data are not buried in data cemeteries such as file folders or storage media; instead, they can be mined to produce valuable reports and research. Ideally an EHR system is designed to facilitate data capture that promotes these multiple, subsequent uses.

Learning about the Omaha System brings new insights and a fresh perspective to documentation processes that can lead to improved data capture and require less intensive efforts by HIM professionals to extract meaningful data. Focusing attention on information management that enhances practitioner workflow and supports quality data capture is the foundation for a well-designed EHR and is a shared value of the Omaha System.

A main purpose of the problem-oriented medical record developed by Lawrence Weed is to manage the complexity of medical knowledge and clinical data while increasing consistency of structure and content of progress notes. The problem list was envisioned as the central place for clinicians to maintain a concise view of a given patient's medical problems in the health record and to facilitate an orderly process of medical problem solving and clinical judgment.

The Omaha System helps clinicians build upon these concepts by focusing attention on the patient problems, supporting a description of the care provided, and then offering a quantifiable method to rate the outcomes achieved.

Capturing Data for Automated Reuse

Technology assists communication by automating the multidisciplinary problem list via embedded clinical terminology standards and data-mapping tools. For example, once a problem list is developed, mapping allows the capture of data in the EHR with the terminology best suited to the needs of the healthcare professional. The resulting automated reuse of data assists the clinician or researcher in using the data for multiple subsequent purposes.

Mapping develops links between concepts within one data set (e.g., a classification or terminology) to the same or substantially similar concepts in another data set. Use of a standard clinical terminology facilitates sharing of problem lists within a healthcare enterprise or with other providers. The mapping also allows the linkage of problems with their interventions and supports the analysis of their relationship to outcomes.

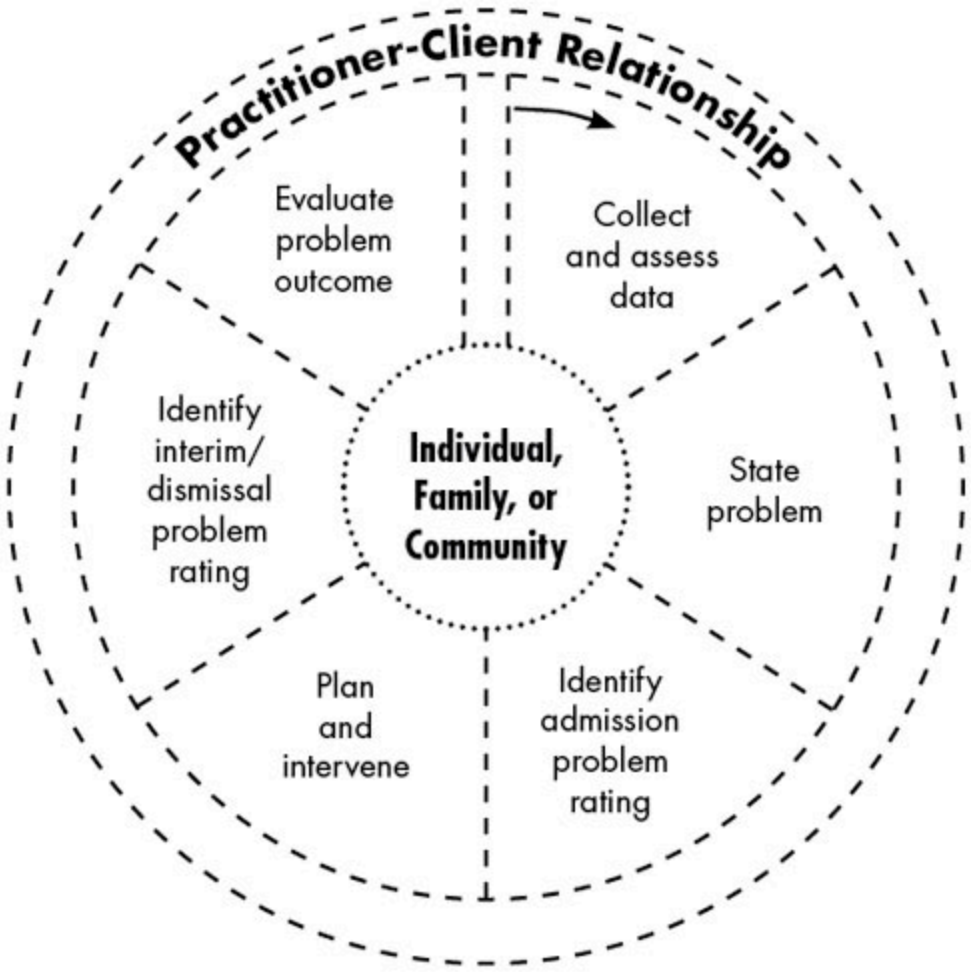
The benefits of using controlled vocabularies, mapping, and data content standards are many. Consistent, standardized naming of terms facilitates the reporting of laboratory data; use of order sets, clinical guidelines, clinical system alerts and reminders; and the automated retrieval of relevant medical literature within an EHR.

Using a classification system such as the Omaha System at the point of care enables practitioners to focus on relevant information in an objective way. The Omaha System helps document and evaluate aspects of care including problems, interventions, and outcomes in practice, education, and research settings.

The Problem-Solving Process

The Omaha System model incorporates the circular, dynamic, interactive nature of the problem-solving process; the practitioner-client relationship; and concepts of critical thinking, clinical decision making, and quality improvement.

The center of the model identifies the pivotal position of the individual, family, and community and the partnership with multidisciplinary practitioners.



Source: Martin, Karen S. The Omaha System: A Key to Practice, Documentation, and Information Management. © Elsevier, 2005.

Describing the System: Components and Terms

The Omaha System consists of three components: the Problem Classification Scheme, the Intervention Scheme, and the Problem Rating Scale for Outcomes (see "Omaha System Overview" on page 45). The components offer users a relational, reliable, and valid structure and set of terms that can link clinical data to demographic, financial, administrative, and staffing data.

A model of the system (shown above) reflects the circular, interactive nature of the process from data collection, critical thinking, and clinical decision making through to evaluation and quality improvement. This process occurs within the dynamics of the practitioner-client relationship. The center of the model identifies the pivotal position of the individual, family, and community and the partnership with multidisciplinary practitioners.

The Problem Classification Scheme is equivalent to the leading two wedges of the model's circle, "collect and assess data" and "state problem." The scheme is a comprehensive, orderly, nonexhaustive, mutually exclusive taxonomy designed to identify diverse health-related concerns. Its simple and concrete terms are used to organize assessment at four levels, flowing from general to specific.

The Intervention Scheme is equivalent to the wedge "plan and intervene." It has a hierarchical structure similar to that of the Problem Classification Scheme. Its three levels of actions or activities flow from general to specific and are used to describe

care plans and services provided by multidisciplinary health professionals.

The Problem Rating Scale for Outcomes is equivalent to three wedges: “identify admission problem rating,” “identify interim/dismissal problem rating,” and “evaluate problem outcome.” It measures the entire range of severity for the concepts of knowledge, behavior, and status. Each subscale provides a continuum for examining problem-specific ratings for individuals, families, or communities at regular or predictable times.

Years in the Making, Use Increasing

Practitioners developed the Omaha System as part of four federally funded research projects conducted between 1975 and 1993. Staff and managers at the Visiting Nurse Association of Omaha and seven additional test sites revised and refined the structure and terms and established reliability, validity, and usability.

The Omaha System was intended to be as intuitive, brief, and flexible as possible. Its structure, terms, definitions, and codes have not been copyrighted so that they are available for use without permission. Although the Omaha System exists in the public domain, it is necessary to maintain its integrity and identify a reference in publications and software.

Initial adopters of the Omaha System included US community settings. Use has expanded across the continuum of care and internationally. Approximately 8,000 practitioners use point-of-care Omaha System software at 300 locations, and 2,000 practitioners use paper-and-pen records. The number and type of vendors who base their clinical documentation software on the Omaha System is increasing rapidly.

The Omaha System was one of the first terminologies recognized by the American Nurses Association in 1992. It is integrated into SNOMED CT, LOINC, and the National Library of Medicine’s Metathesaurus; it is indexed in CINAHL and recognized by standards organization Health Level Seven. In 2007 the Omaha System passed the Healthcare Information Technology Standards Panel tier 2 selection criteria for a use case.

Teaching through Case Studies

The case of Ander M., presented on the following pages, demonstrates the value of a standardized language that describes care needs and treatments provided. The case study consists of two sections: a story and answers.

The story depicts a fictional client, Ander M., and the services he received from a home care nurse. Included are referral details, data that the nurse obtained during the visit, and clues for identification of Omaha System problems, interventions, and ratings.

The answers are terms from the Problem Classification Scheme, the Intervention Scheme, and the Problem Rating Scale for Outcomes. Brief comments placed in parentheses clarify selected answers.

Omaha System case studies have proven to be an effective teaching tool because they offer practice opportunities for new learners and refresher opportunities for experienced users. When used in a group setting with a leader experienced in the Omaha System, case studies facilitate discussion that promote inter-rater reliability.

Promoting Good Documentation at the Time of Care

The effort made by HIM professionals to evaluate documentation after its creation is an important function. The Omaha System offers help at the point of care by facilitating good documentation during its creation. The Omaha System can influence the quality of documentation and data integrity, which results in improved care. HIM professionals can benefit from understanding how the system intertwines patient care and data integrity seamlessly.

The system facilitates innovation as it makes use of many potential health IT benefits, including incorporating data standards and terminologies, supporting evidence-based practice, and developing outcomes data. Because documentation is at the heart of the HIM practice, it is important that HIM professionals become familiar with methods that help practitioners increase data integrity in the EHR at the point of care.

Case Study: Ander M.

Information Obtained during the First Visit/Encounter:

Ander M., a 94-year-old man, lived with his granddaughter and her family for the past six months. The granddaughter called the home care agency and requested that a nurse visit. She indicated that her grandfather "had declined mentally during the past month, seemed forgetful, and had less judgment." She said he was legally blind and had fallen three times during the night in the past three weeks. She and her husband worked full time. On weekdays, Ander was alone from 7:30 a.m. to 3:30 p.m. when the children returned from school. While they were gone, he spent time in the house or outside. Several times he crossed the nearby state highway to visit the neighbors and was not able to find his way home.

During the first visit, the home care nurse noted environmental details. Ander's bedroom was located in the walk-out basement of the two-level home. He complained of poor lighting in his bedroom and bathroom. The nurse saw the neighbor's house from his bedroom window. The nurse noticed two smoke alarms. Throw rugs were on the floors of the hallway and bathroom. Doorways and walkways were obstructed with Matchbox cars and other small toys. The kitchen was located up one flight of stairs; the stairs did not have a railing. Another flight of stairs led to the rest of the home.

Ander said he was willing to talk to the nurse "to make my granddaughter feel better—she worries too much about me and she's just too busy." Ander was dressed appropriately and responded to the nurse's questions. He was oriented to person and place, but not to date and time. He could not remember that his granddaughter had assisted him with a shower yesterday or that he had attended the children's school activity the night before. He did not remember his recent falls; the nurse did not see any bruises or other signs of injury. When asked about crossing the highway to visit the neighbors, he said that he was not familiar with the area and would not do anything like that. The home care nurse measured Ander's vital signs, weight, and height, which were within normal limits. He seemed to be in good physical health, especially for his age.

The nurse called the granddaughter to discuss the visit and suggest a family meeting. When the nurse asked when Ander was last evaluated by a healthcare provider, the granddaughter said it had been several years. The nurse suggested scheduling a visit because of his mental status. The nurse indicated that they could discuss and plan some relatively simple changes in their home to increase Ander's safety: add lighting in the basement area, remove throw rugs and clutter from the hallways and doorways, add a rail to the stairway, and ask the children to store their toys in the toy room.

The nurse said that the greatest concern was his safety during the day when the family was gone and that he needed more supervision. The granddaughter replied that they had started to discuss options such as having a relative stay with him or taking him to a relative's home. The nurse described a local elder day care as another option and indicated that the staff encouraged guests, including those with visual problems, to participate in physical activities, crafts, music, and games and took them on field trips. The granddaughter asked for more details and said she knew that her grandfather was bored. She suggested that they add activities the children and their great-grandfather could share to the agenda and schedule the family meeting for the next evening.

Application of the Omaha System

DOMAIN: ENVIRONMENTAL

Problem: Residence *(high priority problem)*

Problem Classification Scheme

Modifiers: Family and Actual

Signs/Symptoms of Actual:

- Inadequate/obstructed exits/entries
- Unsafe mats/throw rugs
- Structural barrier

Intervention Scheme

Category: Teaching, Guidance, and Counseling

Targets and Client-specific Information:

- Safety (develop plan to remove throw rugs, clutter, toys; add rail; improve lighting)

Category: Surveillance

Targets and Client-specific Information:

- Safety (completed safety checklist and noted needed modifications)

Problem Rating Scale for Outcomes

Knowledge: 2—minimal knowledge (family now concerned about increasing falls, need to increase safety)

Behavior: 2—rarely appropriate behavior (family did not modify environment/residence for 6 months)

Status: 3—moderate signs and symptoms (moderate clutter, throw rugs, toys, poor lighting)

DOMAIN: PHYSIOLOGICAL

Problem: Vision (low priority problem: provide interventions and rate problem if Ander or family want additional services for legal blindness; current needs may be met with Residence and Cognition interventions)

Problem Classification Scheme

Modifiers: Individual and Actual

Signs/Symptoms of Actual:

- Difficulty seeing small print/calibrations
- Difficulty seeing distant objects
- Difficulty seeing close objects
- Absent/abnormal response to visual stimuli

Problem: Cognition *(high priority problem)*

Problem Classification Scheme

Modifiers: Individual and Actual

Signs/Symptoms of Actual:

- Diminished judgment
- Disoriented to time/place/person
- Limited recall of recent events
- Limited reasoning/abstract thinking ability

Intervention Scheme

Category: Teaching, Guidance, and Counseling

Targets and Client-specific Information:

- Day care/respite (an option for Ander while the family was gone)
- Medical/dental care (needs evaluation especially for mental status)
- Safety (needs supervision while family was gone)
- Stimulation (needs activities with the family and during the day)

Category: Surveillance

Targets and Client-specific Information:

- Signs/symptoms—mental/emotional (cognitive changes)
- Signs/symptoms—physical (vital signs, weight, general health)

Problem Rating Scale for Outcomes

Knowledge (Family): 3—basic knowledge (family concerned about cognitive changes)

Behavior (Family): 3—inconsistently appropriate behavior (family requested home visit, beginning to consider alternatives to current situation)

Status: 3—moderate signs and symptoms (Ander oriented to person/place but not to time/date; difficulty with short-term memory; dressed appropriately; reasonable discussion)

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