Structured data entry

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- Deep learning-based overall survival prediction in patients with glioblastoma: An automatic end-to-end workflow using pre-resection basic structural multiparametric MRIs
- Anatomical Study of the Inferior Oblique Muscle and Its Innervation: Morphometric Characteristics, Anatomical Variations, and Histological Evaluation of the Nerve to the Inferior Oblique Muscle
- Mapping the Clinical Pathway for Patients Undergoing Vestibular Schwannoma Resection
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Structured data entry refers to the process of inputting information into a system or database using a predefined and organized format. This method ensures that data is entered in a consistent and standardized manner, making it easier to manage, analyze, and retrieve later on. Structured data entry is commonly used in various fields, including business, healthcare, research, and information technology. Here are some key principles and benefits associated with structured data entry:

Key Principles of Structured Data Entry: Predefined Format:

Define a clear and standardized format for entering data. This includes specifying the type of data to be entered, data formats, and any validation rules. Data Validation:

Implement validation checks to ensure that entered data adheres to predefined rules. This helps prevent errors and inconsistencies in the dataset. Dropdown Lists and Picklists:

Use dropdown lists, picklists, or selection menus for fields where a limited set of predefined options is available. This ensures consistency in data entry and reduces the likelihood of typos. Data Encoding Standards:

Establish encoding standards for different types of data, such as date formats, numeric formats, and units of measurement. This promotes uniformity across the dataset. User Guidance:

Provide clear instructions and guidance to users during the data entry process. This can include tooltips, help texts, or on-screen prompts to assist users in entering information correctly. Required Fields:

Clearly identify and designate fields that are mandatory for data entry. This ensures that essential information is not omitted. Structured Forms:

Design forms with a logical and structured layout. Group related fields together, and arrange them in a way that aligns with the workflow of the user. Data Categorization:

Categorize data into relevant fields based on the nature of the information. This makes it easier to organize and analyze data later. User Training:

Provide training to users on the structured data entry process, including the use of specific data entry forms and adherence to data standards. Benefits of Structured Data Entry: Accuracy:

Structured data entry minimizes errors and inaccuracies by enforcing predefined formats and validation rules. Consistency:

Data entered in a structured format is consistent across the dataset, making it easier to analyze and compare. Efficiency:

The use of dropdown lists, picklists, and predefined formats accelerates the data entry process, improving efficiency. Data Retrieval:

Retrieving specific information from a structured dataset is more straightforward due to the consistent format and organization. Analysis and Reporting:

Structured data lends itself well to analysis and reporting, as the standardized format facilitates the application of analytical tools. Quality Control:

With predefined rules and validation checks, structured data entry contributes to better quality control, ensuring that only valid data is entered. Data Integration:

Structured data is more compatible with integration into other systems or databases, supporting interoperability. Adaptability:

Structured data entry forms can be designed to adapt to changing data requirements, allowing for flexibility as business needs evolve. Compliance:

Structured data entry aids in compliance with industry standards, regulations, and data governance policies. Auditability:

The structured nature of data entry makes it easier to track changes, maintain an audit trail, and trace data entry back to its source. Structured data entry is particularly valuable when dealing with large datasets, databases, and systems where data consistency and accuracy are crucial. It enhances the overall data management process and supports better decision-making based on reliable and well-organized information.

Hanrahan et al. aimed to demonstrate how process mapping can be used to identify reliable areas of documentation in the patient pathway to target structured data entry interventions.

This mixed methods study was conducted in the largest pituitary centre in the UK. Purposive snowball sampling identified frontline stakeholders for process mapping to produce a patient pathway. The final patient pathway was subsequently validated against a real-world dataset of 50 patients who underwent surgery for pituitary adenoma. Events were categorized by frequency and mapped to the patient pathway to determine critical data points.

Eighteen stakeholders encompassing all members of the multidisciplinary team (MDT) were consulted for process mapping. The commonest events recorded were neurosurgical ward round entries (N = 212, 14.7%), pituitary clinical nurse specialist (CNS) ward round entries (N = 88, 6.12%) and pituitary

MDT treatment decisions (N = 88, 6.12%) representing critical data points. Operation notes and neurosurgical ward round entries were present for every patient. 43/44 (97.7%) had a pre-operative pituitary MDT entry, pre-operative clinic letter, a post-operative clinic letter, an admission clerking entry, a discharge summary, and a post-operative histopathology pituitary multidisciplinary (MDT) team entries.

This is the first study to produce a validated patient pathway of patients undergoing pituitary surgery, serving as a comparison to optimise this patient pathway. They have identified salient targets for structured data entry interventions, including mandatory datapoints seen in every admission and have also identified areas to improve documentation adherence, both of which support movement towards automation [1)].

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Hanrahan JG, Carter AW, Khan DZ, Funnell JP, Williams SC, Dorward NL, Baldeweg SE, Marcus HJ. Process analysis of the patient pathway for automated data collection: an exemplar using pituitary surgery. Front Endocrinol (Lausanne). 2024 Jan 12;14:1188870. doi: 10.3389/fendo.2023.1188870. PMID: 38283749; PMCID: PMC10811105.