Neurosurgery Multi-Hospital Web-Based Administrative Database

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Abstract:

The Department of Neurosurgery at Emory University School of Medicine currently serves 6 hospitals across the Atlanta metropolitan area. At most of these facilities, neurosurgery uses a locally installed version of a Microsoft Access database for clinical administrative functions including generating patient lists for patient care and preparing monthly reports on case volume, among others. Unfortunately these locally installed Access databases are not networked or accessible remotely, which would be very helpful for the on-call neurosurgeon permitting them to better and more efficiently care for patients. In addition, because the databases are not networked, it is presently not possible to readily get an all inclusive snapshot of Neurosurgery operations across all hospitals without manually merging the each hospital's database into one. This proposed project would involve creating a multi-hospital web-based database driven solution that would replace the current Access Database. This would not only streamline the current clinical administrative processes but it would also provide needed 'on-the-fly' data about Neurosurgery operations across all hospitals providing insight that presently is not readily available.

Detailed Description:

The Department of Neurosurgery at Emory University School of Medicine covers several hospitals across the Atlanta metropolitan area including Emory University Hospital, Grady Memorial Hospital, Emory Midtown Hospital (formerly Emory Crawford Long Hospital), Egleston Children's Hospital (Children's Healthcare of Atlanta – CHOA), Scottish Rite Children's Hospital (CHOA), and WellStar Kennestone. At most facilities, Neurosurgery utilizes a locally installed version of a Microsoft Access database for clinical administrative functions. The Access Database is used to maintain a list of hospitalized patients on the Neurosurgery service with their locations which is regularly printed out for daily patient rounds. It also includes the name of the attending neurosurgeon caring for each patient, a brief diagnosis and the date of any surgical procedure(s). In addition to generating patient lists, the database is used to manually prepare monthly morbidity and mortality reports presented at grand rounds (forum for discussion of case volume statistics, complications, and deaths for educational purposes). Because the databases are stored locally on computers at each facility, they are not accessible remotely which would be tremendously useful for the on-call neurosurgeon. Moreover, the databases are not networked and therefore all data is siloed by institution. Due to the fact that the databases are not merged, there is no means of obtaining an all inclusive snapshot of Neurosurgery operations across all hospitals at the present time without manually merging the databases.

This proposed project would involve creating a multi-hospital web-based database driven solution that would replace the current Access Database. The solution could be used both locally as the Access database is currently and in addition would permit the roll-up of data across all hospitals Emory Neurosurgery serves. The conversion to a web-based solution would allow remote access from

anywhere. The web-based solution would still be used locally at each hospital to generate a daily patient list for rounds and would automate the generation of the monthly morbidity and mortality reports by institution. In addition, at any given time, via a customizable Neurosurgery 'dashboard,' statistics for specified date ranges by institution or across all institutions could be obtained. The institution wide functionality of the web-based solution would offer the ability to generate a report of cases by type, diagnosis, and neurosurgeon. With the addition of one field to the database solution, the web-based solution could take on additional administrative functions, namely the generation of resident (neurosurgeon trainee) case logs and overall neurosurgery residency program case volume reporting by case type. These are required to maintain residency program accreditation and currently this process is carried out manually in an inefficient process which undoubtedly results in avoidable inaccuracies. The implementation of a system wide Emory Neurosurgery web-based database driven administrative patient database would streamline the administrative reporting process and provide 'on-the-fly' data about Neurosurgery operations across all hospitals providing insights presently not readily available.