

Automating Radiology Quality and Efficiency Measures with Natural Language Processing

All Day Location: HP Community, Learning Center

Participants

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TEACHING POINTS

After completing this exhibit, the viewer should: Understand automated techniques for quality and process improvement using data extracted from radiology reports. Know how to: Apply natural language processing to measure, dashboard, and evaluate quality and process improvement variables in an automated way Implement strategies to improve radiology report quality Use NLP tools in a system for continuous monitoring and improvement in a radiology department

TABLE OF CONTENTS/OUTLINE

Following and brief introduction, the exhibit focuses on practical applications of text mining in radiology practice management, illustrating them with use-case examples. Introduction: Mining data from radiology reports. Why mine quality and operational data from radiology reports? How to access data embedded in radiology reports. Natural language processing methods. Applications of NLP for practice improvement. Quality improvement: Follow-up tracking, critical results reporting, detection of reports describing reduced image quality, diagnostic uncertainty/hedging, report errors. Clinical practice (Case example: pneumonia detection). Operational improvement (Case example: variability in recommendation rates). Integrating data extracted from free-text reports with data from the RIS and PACS: Quality dashboard.