Standardized Reporting of Lumbar Spine MRI Findings

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Purpose and Rationale

This project aims to increase utilization of the standard lexicon in MRI reports of the lumbar spine.

There is enormous variability in the terms used in reporting lumbar spine MR findings. Various phrases and words used are confusing to clinicians reading the reports. There is no standardization in the various terms used to describe the same process, (e.g. herniated disc versus disc extrusion).

The ASNR has come up with a standard lexicon to be used for pathologic findings on lumbar spine MRI reports. That lexicon has been incorporated into the comprehensive radiology lexicon, RadLex. Utilization of this lexicon by all radiologists reading MRI scans of the lumbar spine would standardize the reporting and make it easier for clinicians to understand the implications of the findings.

Resources

Consensus Nomenclature and classification of Lumbar Disc Pathology – recommendations of the combined taskforce of the North American Spine Society, American Society of Spine Radiology, and American Society of Neuroradiology www.asnr.org/spine_nomenclature.

http://www.rsna.org/Informatics/radlex.cfm

Measure

Numerator	Number of MRI reports of the lumbar spine utilizing the appropriate lexicon
Denominator	total # of MRI reports of the lumbar spine

Collecting baseline data

Review the lexicon and make a determination about which of the terms you wish to make the focus of your project. It may be all of the lexicon terms, or it may be a subset of particular importance to your practice (e.g., disc herniation descriptions including the terms of extrusion, protrusion, sequestration).

Select a strategy for data collection. From among the lumbar spine MRIs performed within the study period, you may choose to use 50 consecutive cases; every second, third or fourth case until 50 have been selected; all of the cases done on a specific day or set of days; or any other strategy that will result in a set of 50 or more cases identified at random.

Assign one or more individuals to review the cases and categorize them as compliant (consistent ly using the target lexicon terms) or noncompliant (inconsistent use of terms or use of non-standard terms).

Baseline Data Analysis

Calculate the % of cases from among your sample that were categorized as compliant. This becomes your baseline.

Factors that Can Influence Performance

After calculating the baseline data, determine whether there is room for improvement. For a project such as this, it might be reasonable to set a goal of 100% compliance. Examine the noncompliant cases to identify any patterns of noncompliance that may exist (e.g., certain terms may be used more or less consistently than others). Reflect on your setting and practice, and identify factors that may have influenced your results. Design an intervention to address these factors.

Possible contributors may include:

- Lack of buy-in for or awareness of the lexicon terms. Here, an intervention might be convening the MR radiologists to educate them about and obtain buy-in for using the lexicon. It may be necessary to negotiate the lexicon terms to be prioritized .

- Preferences of individual radiologists for noncompliant terms. In this case, individualized communication about the reasons for and importance of the project might alter their behavior. In such cases, the support and involvement of a senior radiologist in the discussion may be influential.

- Failure to remember the lexicons. Here, creation and placement of visual aids in the reading room may improve performance. Alternatively, creation and adoption of standard reporting templates that employ the lexicon might be pursued.

In selecting an intervention, pick one to implement that you think has the best likelihood of positive effect. Do not perform multiple interventions at once; if you do you will not be able to determine which one had an effect.

Post-Intervention Data Collection and Analysis

Plan to collect data again at a set interval—three to six months after baseline—and then at specified intervals thereafter for the duration of the project (one to three years is typical).

Make sure that cases are collected, tallies are performed and metrics are analyzed the same way as at baseline. The only exceptions to this would be to adjust the number of cases collected if more cases are needed for analysis or to correct a problem identified with the baseline data collection procedure. If so, once the procedure has been corrected use it consistently going forward.

Data should continue to be collected over time. If improvement is continuing, the same intervals for data collection should be recommended. As improvement plateaus the interval for measuring and the number of exams that are measured can be reduced—as long as the metrics are stable. If a significant decrease in performance is seen, the project should start anew with analysis as to cause and potential fix.

You may want to make a chart or graph of your performance over time to identify trends and patterns. Review the data with your project team after every data collection period.

If you are meeting your goals, no further changes may be necessary. However, you should plan to take steps to institutionalize whatever changes contributed to successful performance. If additional improvement is possible, look at your processes again and design additional interventions. It is generally best to only make one intervention per study cycle so that conclusions can be drawn about what caused the observed effect.