Consensus Based Macros: An Easy Tool To Improve the Quality of Radiology Reports Containing Incidental Imaging Findings

Tianyuan Fu, MD, Radiology Resident, University Hospital Cleveland

Sheila Berlin, MD; Amit Gupta, MD; Jennifer Sommer, DO; Jeffrey Sunshine, MD, PhD; Donna Plecha, MD

Background/Problem Being Solved

Actionable incidental findings (AIFs) are common imaging findings unrelated to the clinical indication for which follow-up is recommended. Many AIFs have time and modality-specific follow-up recommendations based on expert consensus. However, there is significant heterogeneity in radiologist classification of AIFs with almost a third of recommendations discordant with guidelines [1]. The ACR states that impressions for AIFs should include lesion location, one specific follow-up modality, follow-up time interval, and reference to an evidence-based consensus document [2]. Our QI initiative aimed to increase the number of reports satisfying those guidelines and improve tracking of AIFs across our health system.

Intervention(s)

Macros were created for pulmonary nodules and liver, pancreas, renal, spleen, and thyroid lesions, and implemented in January 2022. Sources for recommendations included the Fleischner Guidelines and ACR IF Committee White Papers. A "signature" code was also tagged to each macro option. Radiologists were educated on macro usage through demonstrations in faculty meetings, step-by-step instructions on the intranet homepage, and email communication. Web-based dashboards were generated to illustrate macro usage over time and allowed for tracking of different types of AIFs.

Barriers/Challenges

Ensuring macros satisfied personal preferences of established radiologists. Educating main hospital and community radiologists about macro usage and promoting adoption.

Outcome

From January to October 2022, 3991 pulmonary nodules (1324 required follow-up per guidelines), 205 liver (50), 317 pancreas (317), 306 renal, 13 spleen, and 505 thyroid (204) lesions were tracked. In a survey of radiologists participating in this initiative, 70% reported using the macros for some, most, or all AIFs, 84% found the macros easy to adopt, and 62% found the macros saved time. All respondents indicated they would recommend other faculty and residents use the macros.

Conclusion/Statement of Impact

Standardized macros are easy-to-use tools that support high quality impression statements and can also be used to track AIFs across large health systems.

Figure(s)
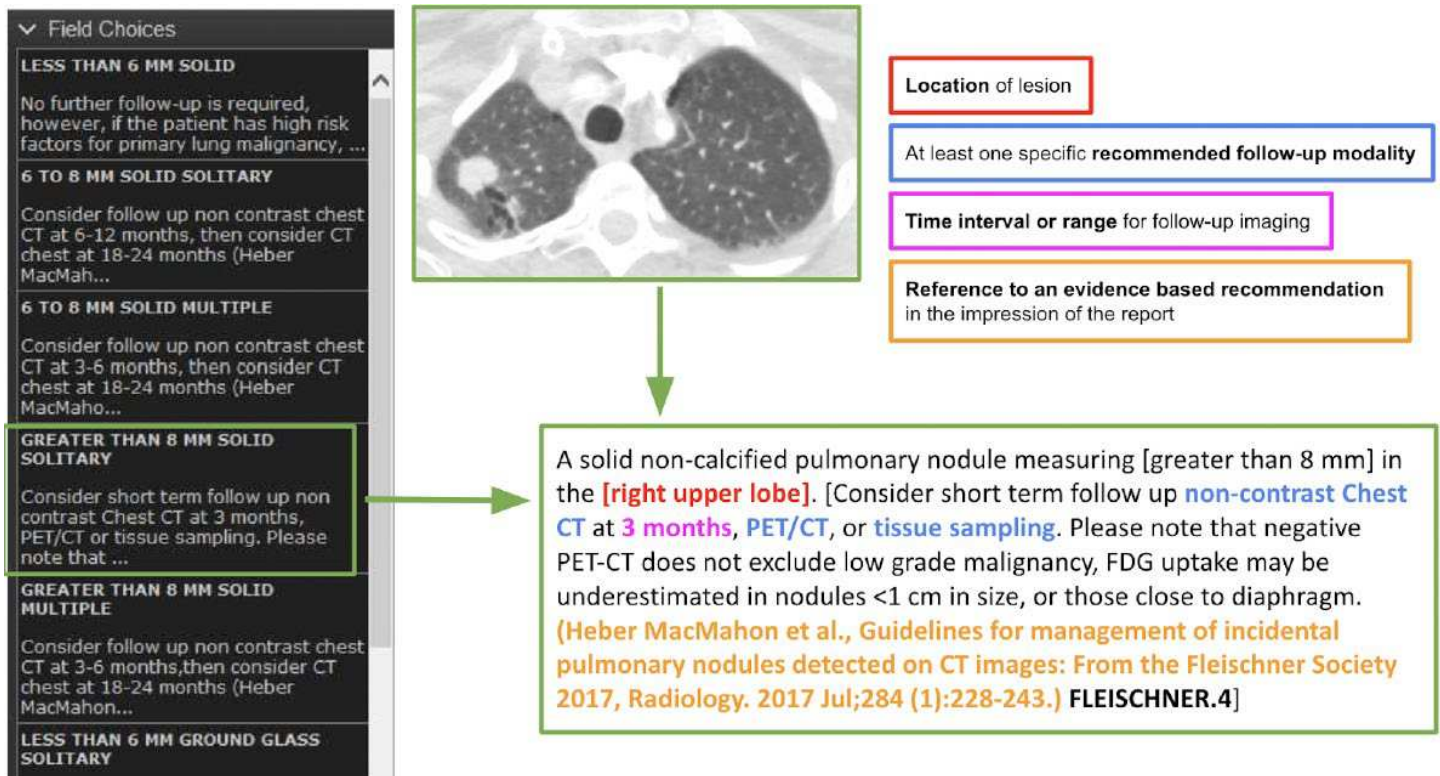
Figure 1. Example usage of our macro for incidental pulmonary nodules, designed based on the 2017 consensus guidelines from the Fleischner Society. The macro creates an impression statement which satisfies Measure #4 and Measure #5 from the Novel Quality Measure Set: Closing the Completion Loop on Radiology Follow-up Recommendations for Noncritical Actionable Incidental Findings recently published by the American College of Radiology. A "FLEISCHNER.1" signature code is tagged to the end of the macro which can be used to track the incidental finding over time.
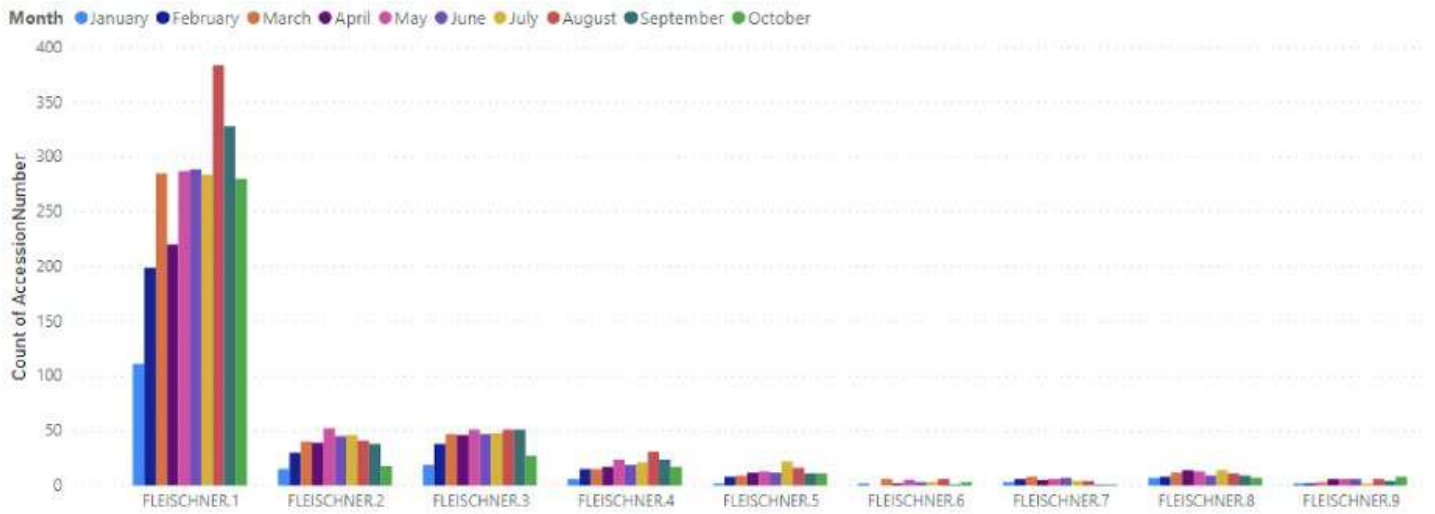
Figure 2. Snapshot of the Dashboard for Pulmonary Nodules. The above histogram "dashboard" shows the number of uses of the Fleischner pulmonary nodule system macro within our radiology department over January through October of 2022. One can see that there is a steady increase in usage of the macro over time. The category FLEISCHNER.1 refers to option 1 within the macro (which in this case refers to solitary solid pulmonary nodule less than 6mm), category FLEISCHNER.2 refers to option 2 within the macro (which refers to solitary solid pulmonary nodule between 6 to 8 mm), etc.

Keywords

Quality Improvement & Quality Assurance