

Implementation of an Incidental Findings Macro for Streamlining Follow-up Recommendations

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Background

Incidental findings are common, often requiring radiologists to communicate recommendations for follow-up imaging. While the American College of Radiology and other radiology societies have published white papers to guide follow-up recommendations, adoption and implementation is inconsistent, with no universal incidental finding reporting standards broadly in use [1-3]. Solutions have been proposed to improve follow-up imaging once recommendations have been made [4], yet few interventions or practical tools are available to facilitate radiologist adherence to current guidelines. Many recommendations involve a complex, difficult to remember algorithm.

Dictation software may include built tools, which are often cumbersome and require many clicks to navigate. We seek to demonstrate a standardized, macro-based approach to quickly reporting incidental findings with society follow up guidelines. The tool requires minimal user input, time, and recall of information. We seek to characterize the use of this tool after an initial, limited release within our institution, and compare to reporting tools built into our dictation software.

Purpose

We seek to assess utilization of a standardized, macro-based approach to quickly reporting incidental findings with society follow up guidelines, compare use to default dictation software functions, and provide the macro for public use.

Methods

We created a unified macro containing guideline recommendations for follow up of 17 common incidental findings. The macro requires only 2 clicks to insert recommendations with cited references, as well as a “guidance” summary feature (figure). A limited roll out was performed and studied via review of our institutional radiology database. Reports dated 8/1/23 and 12/5/23 were extracted using macro keywords for both our incidental macro, as well as keywords for the built-in incidental reporting option within PowerScribe; results were manually reviewed to ensure they contained a use of the incidental macro. Descriptive statistics were calculated.

Example of Incidental Macro Design with Guidance

The screenshot shows a software interface for reporting incidental findings. On the left, a 'Pick List Choices' menu lists various findings, with 'gallbladder polyp' selected. On the right, a detailed guidance section for 'gallbladder polyp' is displayed, including a URL for further reading and specific follow-up recommendations based on size and characteristics. Red arrows point from the menu to the guidance section.

Guideline recommendations inserted to report by macro

Options for patient categorization, based on image findings, age, etc.

Explanation for how to apply society guidelines for each incidental macro

Incidental finding options

Results

Within our study period, the incidental macro was used in 238 unique studies by a total of 45 unique radiologists; the PowerScribe built-in recommendation provider was used in 68 unique reports by a total of 13 unique radiologists. Among the possible 17 incidental follow up recommendations within the macro, a total of 10 were used; among the 28 possible PowerScribe recommendations, only 4 unique recommendations were used. Pulmonary nodule follow up was the most common within both groups, accounting for 81.5% and 77.9% of follow up recommendations, respectively. The incidental macro was used by radiologists reading from seven of our institution’s radiology sections, and was most popular within the ED section. Similarly, usage of the incidental macro skewed toward exams performed in the emergency care setting, while the PowerScribe built-in tool was most used in for exams performed in the outpatient setting.

Conclusions and Limitations

There are no broadly used clinical decision tools to aid with making recommendations for incidental findings. An emphasis must be placed on efficient solutions that communicate recommendations while limiting time burden to radiologists. Our results suggest a preference for use of the incidental macro relative to the built-in tool for providing follow up recommendations for incidental findings at our institution. The incidental macro-based approach appears faster and easier to use for most radiologists. We have made our incidental macro (and other optimized macros) freely available for download and use, using the QR code (bottom left). Further investigation is needed to determine the impact of this unified incidental finding macro on a broader, department-wide roll-out, including impact on reporting times and completion of follow up.

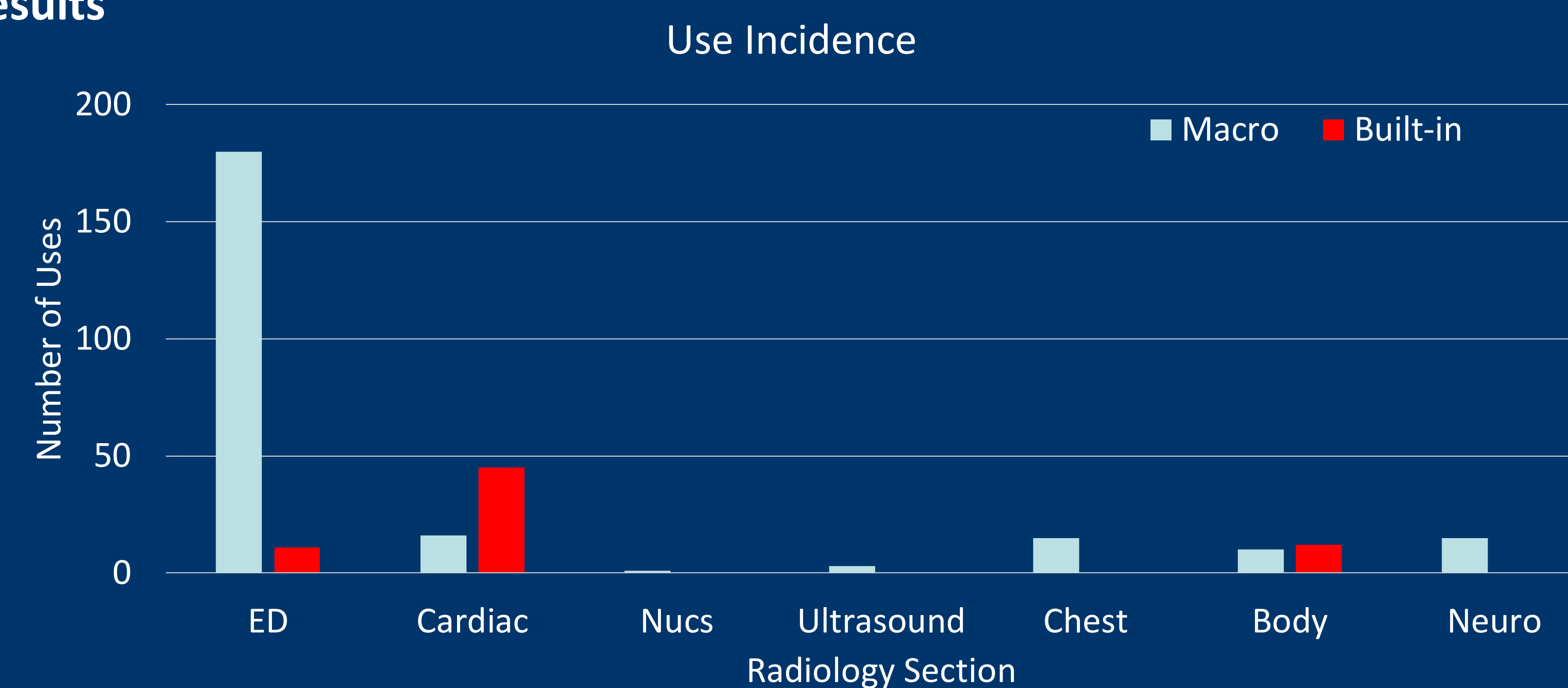
References

- [1] Evans, C.S., et al., Incidental Radiology Findings on Computed Tomography Studies in Emergency Department Patients: A Systematic Review and Meta-Analysis. *Ann Emerg Med*, 2022. 80(3): p. 243-256.
- [2] MacMahon, H., et al., Guidelines for Management of Incidental Pulmonary Nodules Detected on CT Images: From the Fleischner Society 2017. *Radiology*, 2017. 284(1): p. 228-243.
- [3] Tessler, F.N., et al., ACR Thyroid Imaging, Reporting and Data System (TI-RADS): White Paper of the ACR TI-RADS Committee. *J Am Coll Radiol*, 2017. 14(5): p. 587-595.
- [4] Crable, E.L., et al., Management Strategies to Promote Follow-Up Care for Incidental Findings: A Scoping Review. *Journal of the American College of Radiology*, 2021. 18(4): p. 566-579.

Disclosure Information

LT reports receiving royalties for 3 textbooks, *Search Pattern: A Systematic Approach to Diagnostic Imaging* (2020), *A Brief Guide to the Neuroradiology Fellowship* (2021), and *How to be a More Efficient Radiologist: A Guide to Practice, Reporting, and Workflow Optimization* (2023). LT was also a student in the Yale University Investigative Medicine Program, which receives funding from the National Center for Advancing Translational Science, a component of the National Institutes of Health (NIH). No other disclosures.

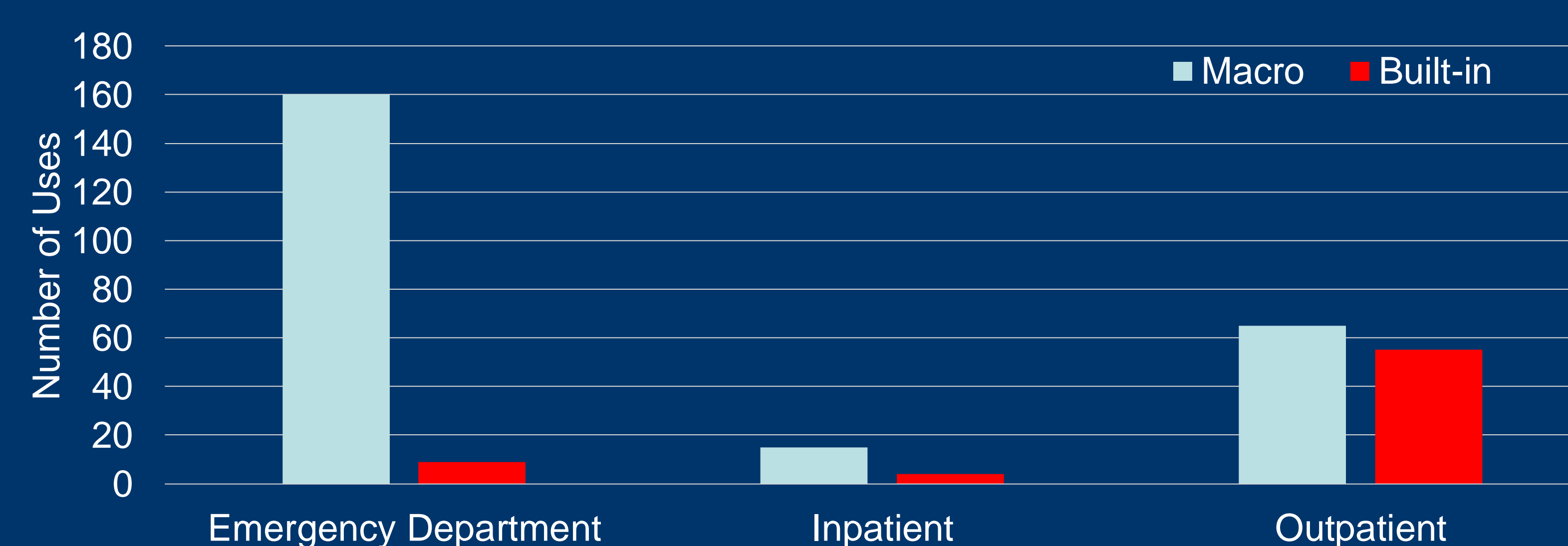
Results



Use by Incidental recommendation type

| Incidental Type | Panc. Cyst | Thyroid Nodule | Adnexal lesion CT/MR | Abd. Aortic Aneurysm | Adnexal lesion US | Gall-bladder polyp | Liver Lesion | Renal Cystic Lesion | Thoracic adenopathy | Pulm. Nodule | Adrenal Lesion |
|-----------------|------------|----------------|----------------------|----------------------|-------------------|--------------------|--------------|---------------------|---------------------|--------------|----------------|
| Macro | 12 | 8 | 8 | 2 | 3 | 7 | 2 | 1 | 1 | 194 | 0 |
| Built-in | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 3 |

Patient Care Setting



Download Incidental macro with instructions here