Incidental Findings: A Survey of Radiologists and Emergency Physicians

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DESCRIPTION OF THE PROBLEM

Incidental findings (IFs) are defined as a "mass or lesion, detected by an imaging examination performed for an unrelated reason" [1]. Approximately a quarter of imaging tests will identify an IF, with nearly a third of CT scans revealing one [2,3]. As CT utilization has grown since the 1970s, the prevalence and burden of IFs have increased [1]. The ACR IF Committee has published white papers outlining imaging and clinical criteria for follow-up of IFs that may represent early cancer [4]. However, institutional programs enabling tracking follow-up recommendations and assurance of follow-up tests' completion for IFs remain sparse [5].

Failure to complete recommended follow-up tests is multifactorial, and reasons include inconsistent communication among radiologists and ordering providers [6], lack of patient and ordering provider knowledge of IF follow-up recommendations [7], lack of tracking systems, and barriers to health care access (including cost) [5]. The emergency department (ED) is a clinical setting with high CT utilization and particular risks for communication gaps. In 2017, there were nearly 25 million CTs performed in US EDs [8]. ED patients are cared for by providers who do not have an ongoing relationship with the patient, and these patients may lack continuity of care from primary care providers. Even when a primary care provider is involved, emergency physicians (EPs) often struggle to contact primary care providers or specialists after hours. It is unclear what resources are employed in the ED setting to ensure appropriate follow-up.

In 2019, the ACR received a grant from the Gordon and Betty Moore Foundation entitled "Closing the Results Loop on Incidental Findings," which aims to improve quality relating to IF communication and follow-up. The project aims to develop a suite of quality measures that ensure the communication and ultimate follow-up of evidence and expert consensus-based recommendations for IFs. A multistakeholder technical expert panel (TEP) was assembled to execute the measure development. Information gathering as part of the development process included an environmental scan of the evidence and a survey conducted to gather perceptions and practices around IFs among providers, patients, and ancillary personnel. This article seeks to describe and compare IF management by EPs and radiologists.

WHAT WAS DONE

Survey Development

The Closing the Loop TEP is cochaired by radiologists and EPs and includes 20 members representing imaging experts, referring clinicians, patients, and personnel involved in systems, quality, and health information technology. The TEP first convened in February 2020 and has met regularly via teleconference.

Using an iterative process, the TEP cochairs and ACR staff developed initial surveys for radiologists, referring clinicians, support staff, and patients. The TEP reviewed the surveys for face and construct validation and incorporated changes and suggestions into the final survey that included a maximum of 24 questions for radiologists and 22 questions for EPs. The question types were multiple choice, sliding scale, rank order, and matrix rating scale with a 13-min projected completion time (e-only Appendix 1 and 2).

Survey Dissemination

Surveys were first disseminated on May 25, 2020, using a web-tool (SurveyMonkey, San Mateo, California) and were closed to responses on July 3, 2020. The survey was accessible on the Closing the Loop project web page of the ACR's website and distributed via email invitations. Outreach to the radiology community occurred via ACR-wide emails, articles in the *ACR Bulletin*, and in the College's online newsletters. To ensure participation by various stakeholders, the TEP members and ACR staff solicited survey participation within their professional networks to include their respective health

1546-1440/21/$36.00 ■ https://doi.org/10.1016/j.jacr.2020.12.027

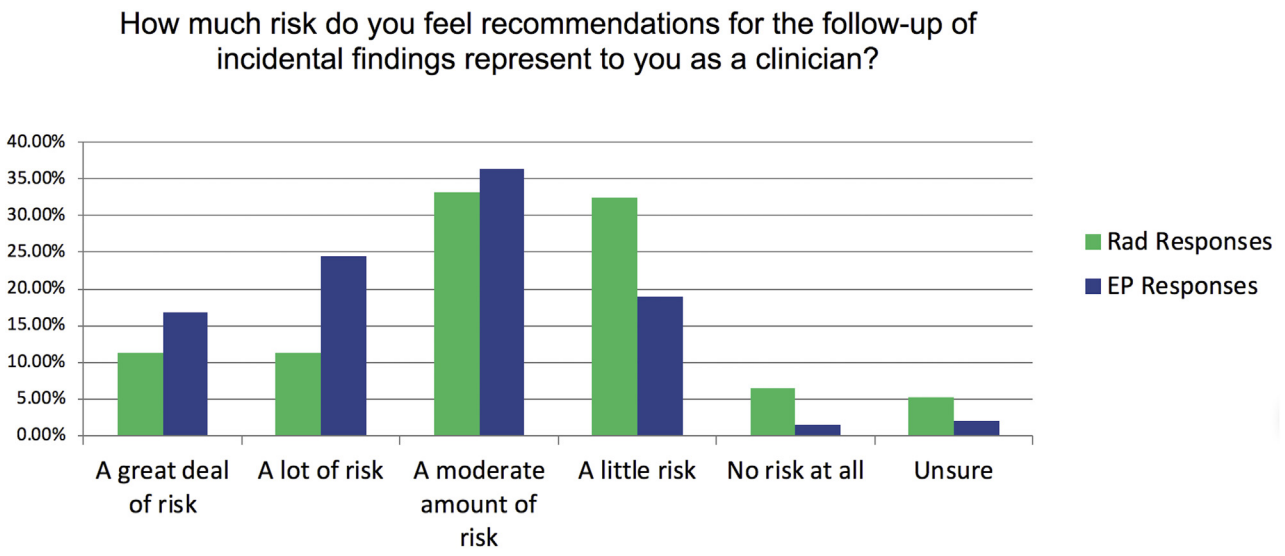

Fig. 1. Perception of risk from incidental findings from emergency physicians (EPs) and radiologists.

care institutions and organizations with which they are affiliated (these included The Beryl Institute, Institute for Family and Patient-centered Care, and Go2 Foundation for Lung Cancer). Other medical professional organizations supported the survey's dissemination by soliciting member participation (these included American College of Physicians, Council of Medical Specialty Societies, American College of Emergency Physicians, the Association for Medical Imaging Management, and the Radiology Business Management Association). Survey participation was also encouraged through specialty-specific social media sites, including the "EM Docs" Facebook page, which includes

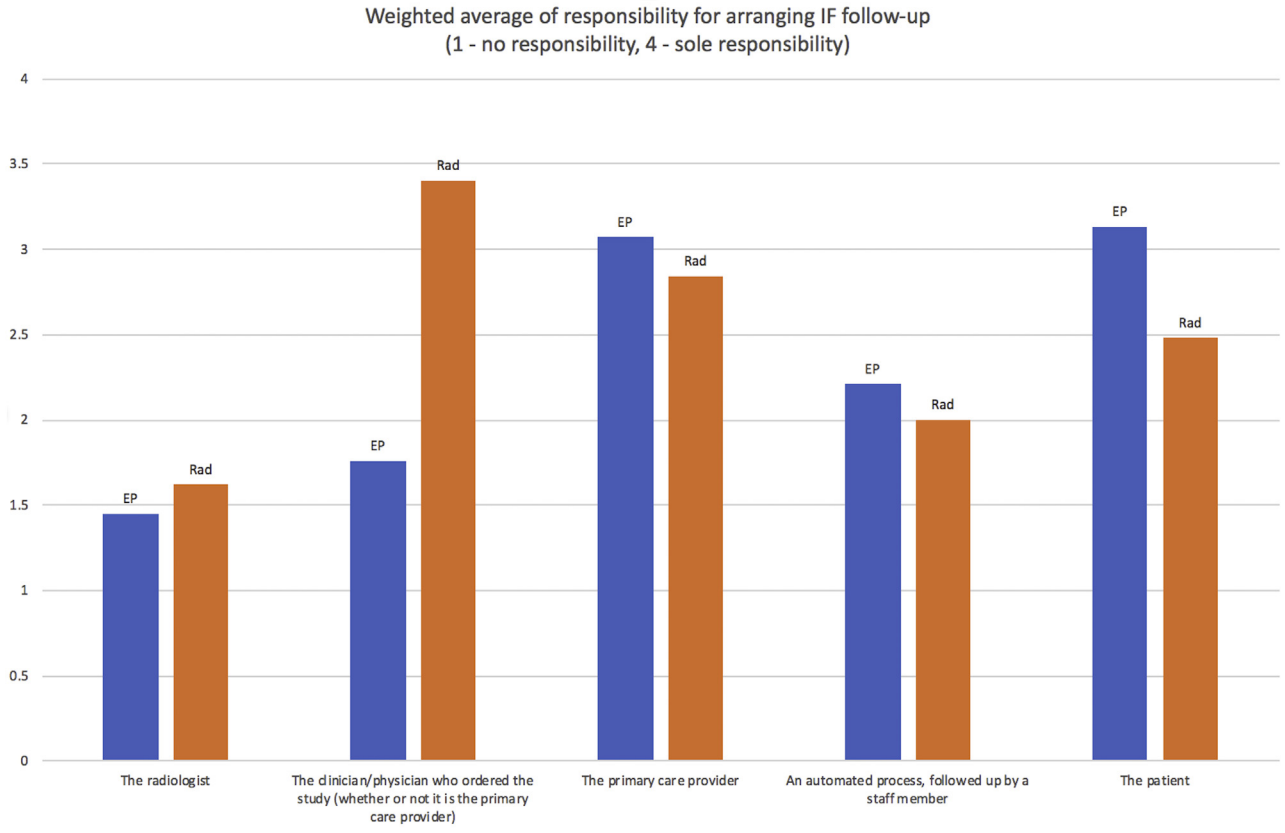

Fig. 2. Responsibility for arranging incidental finding (IF) follow-up as reported by emergency physicians (EPs) and radiologists (Rads).

Fig. 3. Organizational tracking of incidental findings (IFs) as reported by emergency physicians (EPs) and radiologists (Rads).

over 20,000 EPs, the ACR Facebook page, and the ACR's Twitter account.

OUTCOMES AND LIMITATIONS

Respondents included 145 EPs and 247 radiologists. Demographics were generally similar between EPs and radiologists, with the vast majority being hospital-based and nearly evenly split between community and academic hospital-based practices. Age and years of experience were diverse and evenly spread, though responding EPs tended to have practiced for fewer years (Fig. 1).

IFs and Recommendations

Ninety-five percent of EPs reported ordering radiology examinations very frequently or extremely frequently, and 59% of EPs reported that IFs with follow-up recommendations were present in half or more of imaging reports. The majority of radiologists and EPs recognized IFs as at least moderate risk to them as a practitioner. However, EPs were more concerned about risk, with more than 41% of EPs rating risk as a lot or a great deal compared with 23% of radiologists (Fig. 1).

EPs reported "clear and actionable follow-up recommendations" as being present most of the time or nearly always in 52% of cases. However, 42% stated these recommendations were only reported some of the time, and 7% reported rarely or never. Although 87% of radiologists stated they used evidence-based criteria for follow-up recommendations, the inclusion of evidence-based guidelines seemed less obvious to EPs. Although more than a third (34%) of EPs stated that obvious inclusion of evidence-based guidelines occurred frequently, 27% reported it in about half of cases and 17% indicated this occurred in a minority of cases. EPs also stated that citations for evidence were seldom or never available or infrequently available in the majority of reports (69%), and 28% reported this occurred frequently or very frequently.

COMMUNICATION AND FOLLOW-UP

Regarding the responsibility to communicate IFs to the patient, radiologists and EPs agreed that the clinician who ordered the study had the greatest responsibility to communicate the IF follow-up recommendations. As for the responsibility to arrange and ensure follow-up, there was a significant discrepancy between EPs and radiologists, with EPs assigning responsibility to the primary care provider and patient, and radiologists assigned most responsibility to the ordering clinician (Fig. 2).

Radiologists overwhelmingly (82%) stated they rarely or never communicated directly with patients about IFs, with 15% stating they did some of the time and 3% always or most of the time. About half (53%) of radiologists stated they spoke with the ordering clinician some of the time, and 18% stated they did most of the time, and 20%, rarely or never. A majority of radiologists and EPs noted

a role for an automated process in the communication of IFs.

The vast majority of radiologists (86%) reported a departmental or practice policy or guideline for IFs that require closed-loop communication; however, the actual performance of closed-loop communication and tracking of IF follow-up was reported by a minority of radiologists (26% and 23%, respectively). This was similar to the response by EPs, 64% of whom stated that tracking of IF follow-up did not occur, 27% stated they were unsure, and only 10% stating there was tracking (Fig. 3).

IMPLICATIONS AND LIMITATIONS

Together, these results show that IFs are recognized as common and important by both radiologists and EPs. There are gaps in including or communicating concrete and evidence-based recommendations for follow-up. Although EPs and radiologists agree responsibility for communicating and ensuring follow-up is shared, radiologists assigned more responsibility to the ordering physician, and EPs assigned more responsibility to a primary care physician. EPs and radiologists are consistent in reporting that follow-up tracking is occurring in a minority of health systems.

Despite some difference in perception, these results show a common understanding of IFs as a significant problem with incomplete solutions at this time. The creation of quality measures that specify accountability and coordination around the follow-up of IFs is both necessary and likely feasible.

This survey is limited by relying on radiologists and EPs who voluntarily responded to a wide call for participation. There is a potential for bias in responses based on the topic's level of interest, which may skew toward clinicians who have had more difficultly managing IFs. However, the demographics generally showed a mix of community and academic settings and a wide range of experience among both specialties, and we find some substantial relevant differences between specialties. These findings highlight the need for approaches that incorporate these differing perceptions in implementing quality measures in improving care.

ACKNOWLEDGMENTS

This work was supported by the ACR through a grant from the Gordon and Betty Moore Foundation as part of their Diagnostic Excellence Initiative.

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Dr Moore reports grants from Gordon and Betty Moore Foundation, during the conduct of the study. Dr Kadom reports grants from Gordon and Betty Moore Foundation, during the conduct of the study. Dr Seidenwurm reports grants from Gordon and Betty Moore Foundation, during the conduct of the study, salary and benefits from ACR, National Quality Forum, CMS, Acumen—food, travel, lodging, medical legal consulting—plaintiff and defense expert witness fees. Dr Nicola reports nonfinancial support from NeuTigers, outside the submitted work. Ms Fredericks reports grants from Gordon and Betty Moore Foundation, during the conduct of the study. Ms Shugarman reports grants from Gordon and Betty Moore Foundation, during the conduct of the study. Dr Venkatesh reports support from the ACR through the Moore Foundation Diagnostic Excellence Grant program. Dr Venkatesh has also received prior and current contract support from CMS to develop quality measures and national quality improvement efforts directed at improving the efficiency of radiology service utilization in the United States. Dr Moore, Dr Kadom, Ms Fredericks, and Ms Shugarman are nonpartner, non–partnership track employees. Dr Kadom is a partner at Children's Healthcare of Atlanta. Dr Seidenwurm is a partner and shareholder in Sutter Medical Group. Dr Nicola is partner in Hackensack Radiology.

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