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## Improving Communication of Incidental Radiology Findings in EDs



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In emergency departments (EDs), radiology plays a critical role in diagnosing patient conditions. However, incidental abnormal findings—those unrelated to the primary reason for the patient's visit—are often overlooked, potentially leading to missed opportunities for early diagnosis. This is a significant patient safety issue, as undiagnosed conditions, such as cancers, can go untreated without proper follow-up. To address this concern, Vanderbilt University Medical Center developed a robust solution: an electronic alert system integrated into the hospital's electronic health record (EHR). The aim of this innovation is to ensure that incidental radiological findings are communicated efficiently to both healthcare providers and patients, enhancing safety and outcomes.

### Addressing a Critical Patient Safety Issue

Incidental findings in radiology, such as undiagnosed malignancies or other health abnormalities, are not uncommon when patients undergo imaging tests like CT scans, especially in trauma cases in the ED. The challenge arises when these findings are not followed up properly, which can lead to missed diagnoses and serious health consequences. Research shows that up to 27% of incidental findings are related to the first diagnosis of malignancies. For example, when patients present in the ED for trauma care, the radiological imaging often reveals abnormalities unrelated to their injury. Without a systematic process to communicate and act upon these findings, patients risk leaving the ED without further investigation or treatment for potentially life-threatening conditions.

Vanderbilt's innovation directly addresses this challenge by incorporating an electronic trigger tool into the hospital's EHR system. This tool is designed to automatically alert ED physicians when an incidental finding is identified by the radiologist. Once alerted, the ED physician initiates a follow-up process, ensuring that these findings are not overlooked and that appropriate action is taken. The goal is to make certain that critical, incidental findings are communicated promptly and effectively, with follow-up care provided in a timely manner to improve patient outcomes.

### The Four-Step Critical Radiology Alert Process

The core of this innovation is a four-step critical radiology alert process designed to streamline communication and follow-up for incidental findings. When a radiologist identifies an incidental abnormality, they trigger an alert that notifies the ED physician. The physician, upon receiving the alert, is required to complete a follow-up request form within the EHR system. This form details the necessary steps for ensuring that the patient is informed about the incidental finding and that appropriate follow-up is arranged.

The process involves a systematic approach to manage these incidental findings. The first step is informing the patient about the abnormality, which is then documented in the physician's notes. This ensures transparency and that the patient is aware of the finding. The second step is to determine whether the patient is in-network or out-of-network with the medical centre, as this can influence the follow-up process. For in-network patients, the system automatically notifies their primary care physician (PCP), who is responsible for ensuring the patient receives proper follow-up care. For out-of-network patients, ED nurse case managers step in to communicate with the patient's PCP or to help the patient connect with appropriate healthcare services, ensuring no one is left without support.

The final element of the process is the weekly review of the critical radiology alert reports by ED nurse case managers and cancer centre navigators. This ensures that all patients with identified incidental findings receive appropriate follow-up, regardless of their insurance status or healthcare network affiliation. This comprehensive, four-step approach guarantees that every patient has their incidental findings addressed and followed up on, reducing the risk of missed diagnoses and improving safety across the board.

### Key Results, Benefits and Sustainability

The impact of the critical radiology alert process has been notable. In the first 13 months of its implementation, the system successfully facilitated communication and follow-up for 888 out of 932 emergency department visits with incidental radiology findings—representing an impressive 95% success rate. This high level of success was made possible through the seamless integration of the alert system into the hospital's existing EHR infrastructure. The process is efficient, requiring a maximum of just two minutes to complete, which means that it does not create a significant burden for the ED staff. Furthermore, by immediately connecting patients to case managers and navigators, the system ensures that follow-up care is organised in a timely manner.

Another significant benefit of this innovation is its scalability. The use of an EHR system for critical alerts allows the process to be easily adopted by other healthcare organisations, improving communication and follow-up across various settings. By reducing the risk of missed diagnoses, particularly in cases where incidental findings could be indicative of serious conditions such as cancer, the innovation contributes to better patient outcomes. Moreover, it enhances coordination between healthcare providers, creating a more cohesive care plan for patients.

To ensure the long-term sustainability of the critical radiology alert system, ongoing monitoring is essential. Regular reviews of the data are conducted to ensure that the process remains effective and that all identified findings are followed up appropriately. Additionally, staff training is crucial for maintaining the efficiency of the system. Vanderbilt ensures that new staff members are trained during their orientation, with a specific focus on the critical radiology alert process. Moreover, staff members have access to training materials, protocols and checklists to refresh their knowledge periodically. This approach helps sustain the success of the innovation and ensures it remains an integral part of the hospital's safety culture.

Vanderbilt University Medical Center's critical radiology alert process offers a pioneering solution to a significant patient safety issue. By improving the communication of incidental radiology findings and ensuring timely follow-up care, this innovation helps prevent missed diagnoses that could otherwise result in serious health consequences. The success of this initiative not only highlights the potential benefits of integrating technology into healthcare systems but also underscores the importance of clear communication and coordinated care. With its high success rate and ease of implementation, this model has the potential to be adopted by other healthcare institutions, contributing to the broader goal of improving patient safety and care outcomes.

**Source:** [Patient Safety Network](#)

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