Building a Structure to Effectively Conduct Patients with Relevant Imaging Incidental Findings in an Emergency Department
Authors

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Adverse Event

- CT of Abdomen for abdominal pain (Emergency Department)
- Incidental Finding of a Pulmonary Nodule that missed follow-up!
- Almost 1 year later a Lung Adenocarcinoma was diagnosed with Hilar and Subcarinal Lymphnode metastasis (PET/CT)
Purpose

• The adverse event inspired us to *take an action*!

• Build a quality infrastructure to manage **incidental findings** in patients who underwent imaging exams in an Emergency Department.
Methodology

- PDCA Methodology (Plan Do Check Act) was used

Patient Unawareness
- Does not understand or forgets to follow recommendations

Missed Timing for Treatment
- Report is not clear in the recommendations
- Only identify the finding after patient discharge

Care Team Miscommunication
- Underestimate the importance of Incidental Finding
- Misunderstand the Radiologic Report

Radiologist

Emergency Department Physician
- Reported and Documented Incidental Finding can become a great risk for Lawsuit

Missed Follow-up of Incidental Finding
- Fails to communicate Incidental Finding to the Patient

Plan: Ishikawa Diagram
Do: Workflow

- Radiologist Identify *IF* and communicates with the *QO* by e-mail
- Quality office organizes the communication of the *IF*
- Schedule a Consultation with the Radiologist if needed
- Radiologist writes a report on *RIS* with recommendations
- *QO* tracks recommendations

**Abbreviations**
- IF: Incidental Finding
- RIS: Radiology Information System
- QO: Quality Office
TABLE: Management of Incidental Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>total exams</td>
<td>34,321</td>
</tr>
<tr>
<td>incidental findings</td>
<td>22 (0.06%)</td>
</tr>
<tr>
<td>subsidiary exams</td>
<td>11</td>
</tr>
<tr>
<td>biopsies</td>
<td>3</td>
</tr>
<tr>
<td>outcomes</td>
<td>1 early lung cancer (curative surgery)</td>
</tr>
<tr>
<td>management costs</td>
<td>US$ 20,532.36</td>
</tr>
</tbody>
</table>

Results of the Incidental Findings Management Program from March/2016 to March/2017
Check

- Hepatic Nodule
- Lung Nodule
- Other Abdominal Findings
- Renal Nodule
- Others

PDCA
Act

• This Quality Improvement action is Aligned with the “Triple Aim”:

1- Patient Experience: the patient feels that someone is taking care of his/her health.

2- Populational Health: acts on prevention.

3- Reduce per capita costs: diseases are treated earlier.

• Places radiologists in a central role in clinical management adding value to our practice.

*http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/default.aspx
Act

• **EVIDENCE: Spontaneous manifestation of a patient:**

“My husband underwent an emergency CT, and the doctor who analyzed the images saw a lung nodule that wasn’t related to the main complain. This doctor called in to advise on follow-up.

We are very thankful for all the attention that you gave us.”
Act

• The implemented structure improved quality and safety of patients.
• Places radiologists in a central role in clinical management
• Adds value to our practice.
• It is cost-effective: it was necessary 22 interventions to treat an important finding (in our case an early stage lung cancer).
• Total cost of US$20,532.36 was spent for follow-up, and treatment in order to treat one life-threatening finding.
Discussion

• We present an early and limited experience of the Radiology Department playing an essential and central role in patient management.

• The main weakness of the program is that it depends on the active notification of the radiologist.

• Our experience showed that most incidental findings were underreported.
Discussion – Future Perspectives

• Our goal is to expand this program to achieve the rate of 2% of incidental findings that need additional intervention, as is reported by Lumbreras et. al in a large prospective study published in 2014 in *Clinical Imaging*.

• **Compliance** monitoring with consensus guidelines like the ACR’s guidelines\(^2\) for incidental findings should be an improvement for this program\(^9\).

• **Automated tools** will certainly improve underreport of notification and follow-up. An experience of an automated tool for recommendation tracking was described by Cook et. al in *JACR 2017*\(^{10}\).
Bibliography


Thank you!

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