Standardized reporting and management of suspicious findings on abdominal CT and MRI is associated with improved pancreatic cancer diagnosis

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| Challenge | Follow-up of abdominal computed tomography (CT) and magnetic resonance imaging (MRI) findings suspicious for pancreatic cancer may be delayed if documentation is unclear, and without a well-defined specialist referral pathway in place. |
| Existing Evidence | Pancreatic cancer is often diagnosed late and has high mortality rate with five year survival of only 10.8%. However, when it is diagnosed early stage, the five-year survival is 41.6%. With rising use of CT and MRI, we are detecting many incidental cysts which may be precursor to pancreatic cancer as well as suspicious masses. Pancreatic cysts are also known to increase risk of pancreatic cancer at other sites other than the cysts. Early detection of pancreatic cancer is associated with decreased morbidity and mortality. Pancreatic lesion reporting for CT and MRI by radiologists has traditionally been freeform and unstructured, potentially resulting in unclear and non-uniform recommendations for further workup and/or follow-up of pancreatic lesions. |
| Target Population | Kaiser Permanente Northern California members aged ≥18 years who underwent an eligible CT or MRI that included the abdomen during the period January 1, 2016, to August 31, 2019. |
| Intervention or Exposure | The radiology intervention classifies pancreatic findings into six categories and several additional subcategories and applies hashtags that are easily searchable. Using the hashtags, algorithms written into the electronic medical record automatically identify patients with findings suspicious for pancreatic cancer. These patients are automatically forwarded to a worklist that is monitored daily by a care coordinator in the gastroenterology department. The reporting system also standardizes the recommendation for follow-up imaging of indeterminate pancreatic cystic lesions according to lesion size and patient age. |
| **Outcomes/Key Findings** | The intervention was associated with a 46% greater odds of diagnosing pancreatic cancer within 120 days of imaging (adjusted OR, 1.46, 95% CI, 1.04-2.06). Structured reporting of pancreas findings on CT and MRI and attaching hashtag with appropriate action plan led to earlier diagnosis of pancreatic cancer. |
| **Resulting Action/Change** | **Improved communication and triage of patients with suspicious pancreatic imaging findings after implementing structured radiology reporting, creating a dedicated referral pathway, and leveraging the integrated electronic medical record resulting in faster definitive diagnosis/treatment for patients with pancreatic cancer** |
| Additional Recommendations | Implementing the hashtag system enables further research for patients with indeterminate pancreatic cystic lesions to determine and refine the optimal follow-up imaging intervals. |
| Implementation Tools | Deployed structured pancreatic lesion phrases in the radiology reporting system along with educational guidelines and materials easily accessible to the reporting radiologists at the time of interpretation. |
| Implementation Measurement | Standardized hashtag reporting implemented for suspicious pancreatic lesions seen on CT/MRI for all adult KPNC members.  Odds of pancreatic cancer diagnosis within 120 days, for all adult members and by location/race/ethnicity/sex/gender. |
| Reference | Figure, table, graphical abstract  doi: |