Implementation of Radiology E-Consults at an Academic Medical Center.

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With special help from all the HUP Radiologists.
Radiology E-Consult

- Provider-to-provider **asynchronous communication** via Epic/Sectra (EHR) to improve access to Radiology expertise.
- Conceived to provide **timely care** without an office visit.
- Avoid informal “curbside” consultations.
- **Improve workflow** (fewer reading room interruptions).
- **Reduce cost, improve patient/physician experience and help reduce unnecessary in-person visits.**
<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>HUP</th>
<th>PAH</th>
<th>PPMC</th>
<th>CCH</th>
<th>LGH</th>
<th>PMPH</th>
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</thead>
<tbody>
<tr>
<td>Outpatient visits</td>
<td>5,684,554</td>
<td>1,830,448</td>
<td>255,680</td>
<td>240,254</td>
<td>420,188</td>
<td>1,156,129</td>
<td>211,014</td>
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<td>ED visits</td>
<td>337,712</td>
<td>59,016</td>
<td>39,112</td>
<td>46,395</td>
<td>37,043</td>
<td>111,931</td>
<td>44,215</td>
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<td>Adult admissions</td>
<td>129,016</td>
<td>33,473</td>
<td>17,923</td>
<td>17,244</td>
<td>14,132</td>
<td>29,245</td>
<td>16,999</td>
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<td>Births</td>
<td>19,272</td>
<td>4,381</td>
<td>5,357</td>
<td>-</td>
<td>2,967</td>
<td>4,312</td>
<td>2,255</td>
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<tr>
<td>Licensed beds</td>
<td>2,941</td>
<td>807</td>
<td>475</td>
<td>375</td>
<td>252</td>
<td>603</td>
<td>429</td>
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<tr>
<td>Physicians</td>
<td>8,923</td>
<td>2,488</td>
<td>1,632</td>
<td>1,746</td>
<td>703</td>
<td>909</td>
<td>1,445</td>
</tr>
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</table>

Penn Medicine Primary Care Service Line
Approximately 103 Primary Care Practices [350 Physician FTEs and 150 APP FTEs]
Approximately 600,000 active patients and over 1.5 million patient visits annually.
Placing and Receiving a Radiology E-Consult

E-CONSULT RADIOLOGY

Process Instructions: "When you sign this order, it will automatically route to the responding e-consult pool of specialists. Expect a reply within 2 business days."

- I am:
  - [ ] Requesting advice for test/imaging interpretation or diagnostic next steps (best test)
  - [ ] Requesting advice on management
  - [ ] Requesting input on workup in anticipation of a specialist office visit

- Has this patient seen a specialist before for this problem?
  - [ ] Yes
  - [ ] No
  - [ ] Maybe

- Would you have referred this patient for an in-person visit if e-consult wasn't available?
  - [ ] Yes
  - [ ] No

- Time spent preparing and sending e-consult:
  - [ ] < 15 minutes
  - [ ] 15 - 30 minutes
  - [ ] > 30 minutes

- Comments:
  - Please state your e-consult question here:
  - Share relevant data here, especially if data may be limited in the chart.
  - The Comments field contains unfilled variables ("**") or SmartLists.

UP DULLES GROUND GI/GU - KALPANA SURESH

HUP CT Body to Protocol: 198
HUP MR Body to Protocol: 269
Types of Questions

• **Next best test to order.**
  - Concern for Cholangiocarcinoma. What is the next best test to order?
  - CTA for AVR showed growing pancreatic mass. CT vs MRI for further work-up.

• **Follow-up guidelines.**
  - Patient had recent normal breast MRI (within 3 months). Does patient need a screening mammogram at this time?

• **Clarification of the impression.**
  - Patient had pulmonary granulomas on coronary calcium scoring CT. Does this require additional work-up?

• **Contrast/Protocol questions.**
  - Patient with abdominal pain, dilated CBD and weight loss. PennChart has an order for MR abdomen secretin protocol. Is this an appropriate order to exclude pancreaticobiliary pathology? Does this patient require contrast?
  - GFR related questions.

• **Miscellaneous.**
  - Are any of the lymph nodes seen on recent CT amenable to US or CT-guided biopsy.
  - Patient requiring MRCP for pancreatic lesion but has braces.
Radiology E-Consult

Number of Consults

Consult Month

- 1 Radiologist
- 6 Radiologists
97% of consults were placed by Primary Care Providers.
Approximately 75% of consults were responded to within 1 day.
Would you have made a referral had E-Consult Services not been available?

- Yes: 21%
- No: 79%

95% of consults took less than 15 minutes.
Future Directions

• Reduce turnaround time for E-Consult responses.
• Reduce number of unnecessary Specialist referrals.
• Study the cost reduction in advanced imaging.
• Expand beyond PCP base.
• Increase the number of Radiology Subspecialists in the E-Consult pool.
• Survey PCPs for feedback/satisfaction.