

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

Kalpana Suresh, MD

Mitchell Schnall, MD, PhD

Charles E. Kahn, Jr., MD, MS

Mark Rosen, MD, PhD

Scott O. Trerotola, MD

Hanna Zafar, MD, MHS

Tessa S. Cook, MD, PhD

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.**

Penn Medicine Fiscal Year 2020

	Total	HUP	PAH	PPMC	CCH	LGH	PMPH
Outpatient visits	5,684,554	1,830,448	255,680	240,254	420,188	1,156,129	211,014
ED visits	337,712	59,016	39,112	46,395	37,043	111,931	44,215
Adult admissions	129,016	33,473	17,923	17,244	14,132	29,245	16,999
Births	19,272	4,381	5,357	-	2,967	4,312	2,255
Licensed beds	2,941	807	475	375	252	603	429
Physicians	8,923	2,488	1,632	1,746	703	909	1,445

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

Procedures

Name

  E-CONSULT ENDOCRINOLOGY

  E-CONSULT GI - GENERAL

  E-CONSULT INFECTION DISEASE

  E-CONSULT CARDIOLOGY

  E-CONSULT RHEUMATOLOGY

 E-CONSULT DIABETES

 E-CONSULT FAMILY MEDICINE

 E-CONSULT GENETICS

 E-CONSULT GI - HEPATOLOGY

 E-CONSULT PHARMACOGENOMICS

 **E-CONSULT RADIOLOGY**

 E-CONSULT RENAL

 E-CONSULT SLEEP

E-CONSULT RADIOLOGY ✓ Accept ✗ Cancel

Process Instructions: ****When you sign this order, it will automatically route to the responding e-consult pool of specialists. Expect a reply within 3 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?

! Would you have referred this patient for an in person visit if e-consult wasn't available?

! Time spent preparing and sending e-consult:

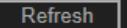
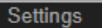
! Comments:   100%

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.

HUP DULLES GROUND GI/GU - KALPANA SURESH

Review  Study History  Recent Studies Report  Personalize  Location Management  Epic Team Help  5  0  Refresh  Settings

HUP CT Body to Protocol: 198  9

HUP MR Body to Protocol: 269  4

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?

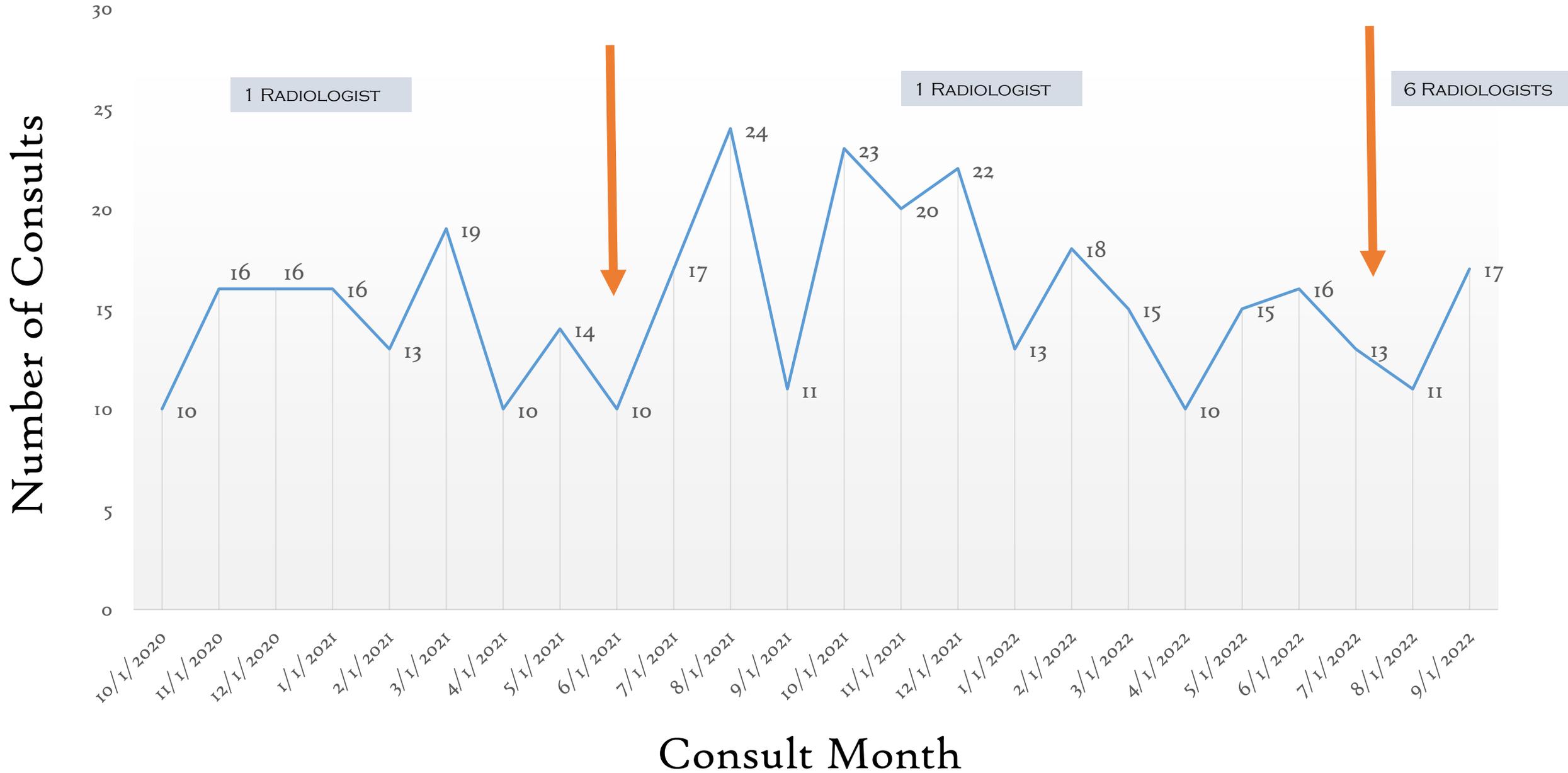
- **Contrast/Protocol questions.**

- 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.

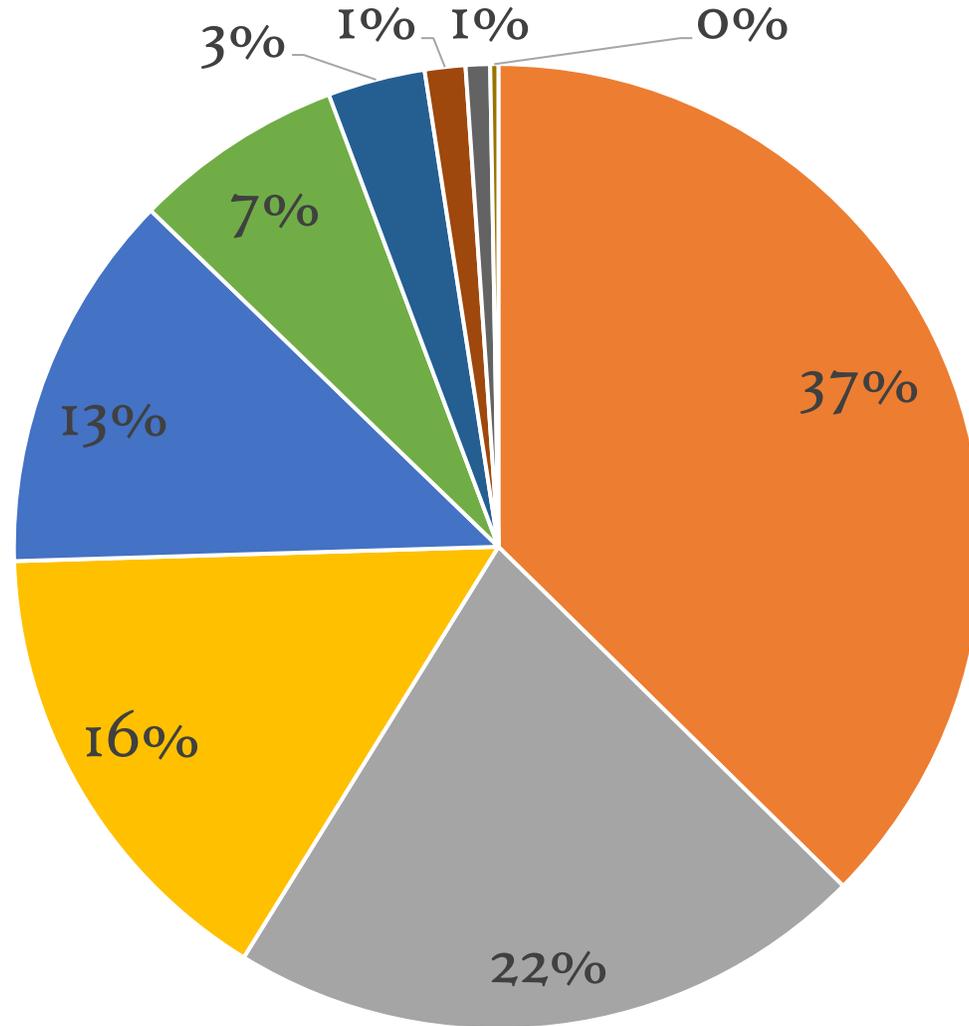
- **Miscellaneous.**

- 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



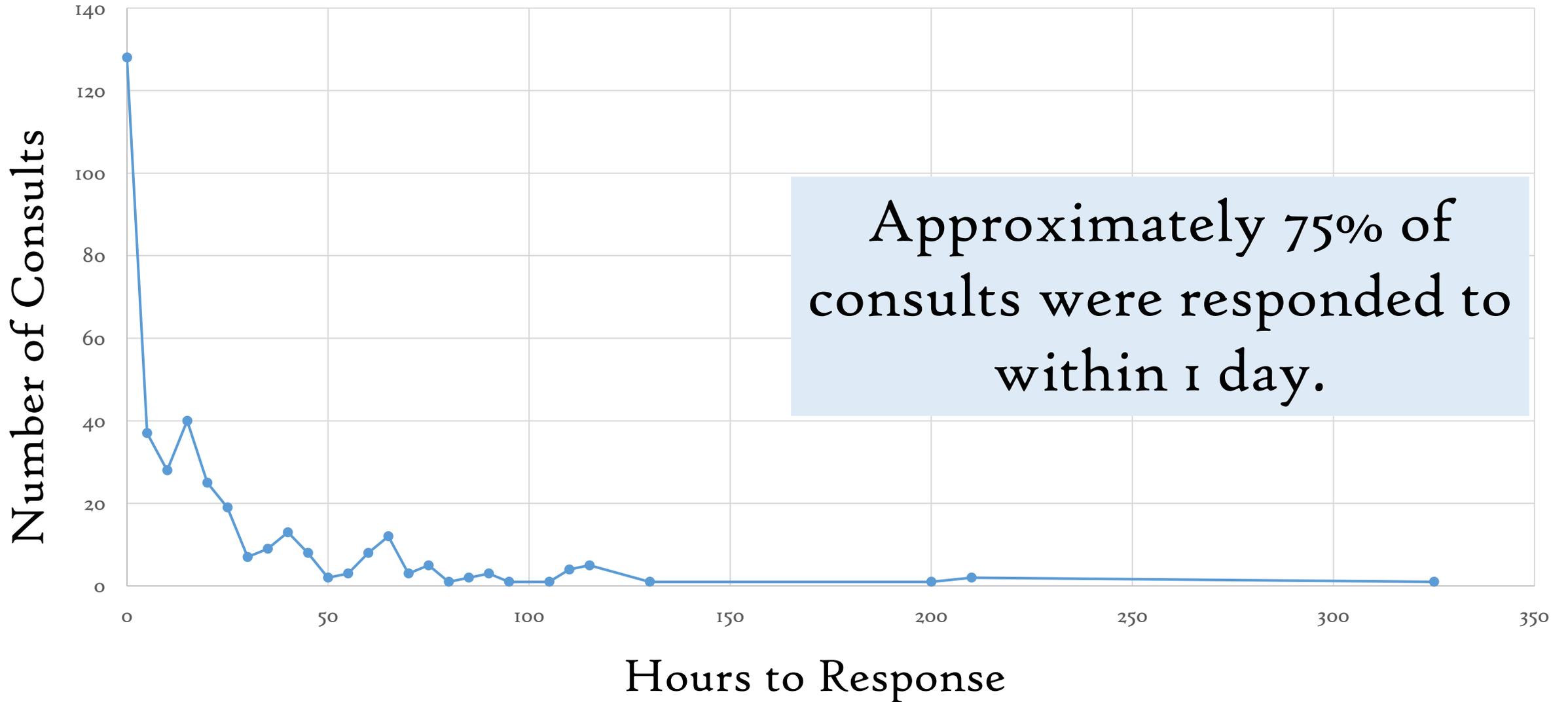
Consults by Radiology Division



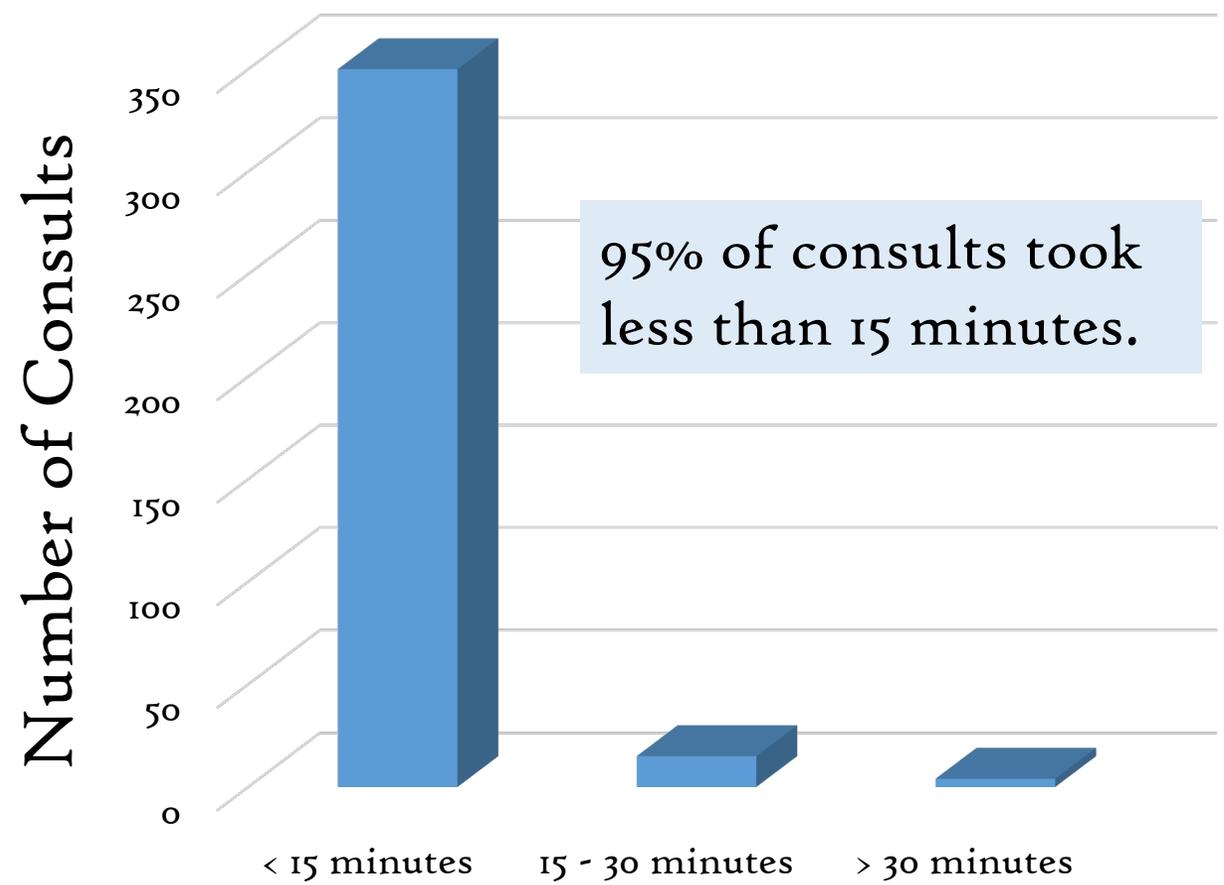
97% of consults were placed by Primary Care Providers.

■ Divison ■ Body ■ Neuro ■ Chest ■ MSK ■ Breast ■ CVI ■ Nuclear ■ Other ■ IR

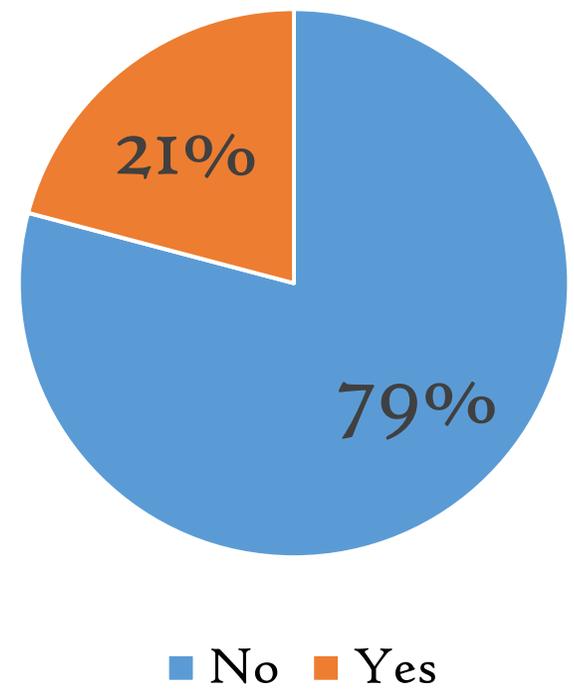
Radiology Response Time



Time Spent Per Consult By Ordering Clinician



Would you have made a referral had E-Consult Services not been available?



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.