

Poll Question #1

- What is your primary role in VA?
 - Student, trainee, or fellow
 - Clinician
 - Researcher
 - Administrator, manager or policy-maker
 - Other

Poll Question #2

- What is your participation level in the specialty care initiatives, such as the E-Consults, Mini-Residency, or SCAN-ECHO programs?
 - Minimal
 - Moderate
 - Extensive

Poll Question #3

- Describe your experience working with CDW administrative data?
 - Minimal
 - Moderate
 - Extensive

Lessons Learned from the Partnered Evaluation with the Office of Specialty Care

September 28, 2016

Thomas Glorioso, MS

Michael Ho, MD, PhD

Office of Specialty Care and Specialty Care Transformation

- Of 8.3 million Veterans receiving health care annually, ~50% see one or more specialists
- For Veterans in rural areas, access to specialists may be challenging due to a limited number of specialists and geographic distance to tertiary care centers.
- In May 2011, Office of Specialty Care launched four initiatives:
 - 1) Specialty Care Access Networks-Extension for Community Healthcare Outcomes (SCAN-ECHO)
 - 2) Specialty Care Mini-Residency Program
 - 3) Electronic Consults (E-Consults)
 - 4) Specialty Care Neighborhoods

Specialty Care Evaluation Center

- QUERI released RFA to fund 2 partnered evaluation centers (Aug 2011)
 - Collaborative evaluation (qualitative and quantitative) with program office
- Oct 2011 funding notification: (Denver/Seattle and Cleveland/Ann Arbor/East Orange)
- Nov or Dec 2011: In person meeting in Washington DC

Virtual Evaluation Center

- Following in-person meeting, decided to work together as 1 virtual center
- Weekly team meetings
 - Qualitative and quantitative groups
- Operational partners invited to attend meetings
 - Feedback on evaluation
 - Suggestions for program changes based on evaluation
 - Priority setting

Spectrum of Evaluation Projects

- Mini-residency program
 - Dermatology
 - Musculoskeletal
- SCAN-ECHO
 - Pain
 - Hepatitis-C
 - Heart Failure
- E-Consults
- Return on Investment
 - Pain SCAN-ECHO
 - Hepatitis C SCAN-ECHO
 - Musculoskeletal Mini-residency

Examples of Evaluations

- Procedural Use after Mini-Residency Training
- Trends in E-Consult Use

Dermatology Mini-Residency

- Question: Did the number of dermatology procedures performed by a primary care provider (PCP) increase after attending the dermatology mini-residency program?
- 48 providers underwent training at 10 separate locations between August 2013 and August 2015
- Evaluate procedures performed using 21 different CPT codes

Dermatology Mini-Residency

- Quantitative approach: Compare 1-year pre counts of unique visits with CPT codes and post counts for patients in the providers' panels
- Differential follow-up after training by provider and not all providers had 1-year follow-up
 - Compare 1 year pre count with 1 year 'annualized' counts
- Aggregate results by provider and procedure (CPT code)

Provider Results

| Provider ID | N Pre (1 Year) | N Post | N Post (Annual) | Change |
|-------------|----------------|--------|-----------------|--------|
| A | 0 | 18 | 12.3 | 12.3 |
| B | 161 | 398 | 344.5 | 183.5 |
| C | 3 | 1 | 0.5 | (2.5) |
| | | | | |
| Z | 1,051 | 2,044 | 968.3 | (82.7) |

- > 85% of providers saw an increase in the annualized rate of procedures performed
- Total number of procedures performed by 41 providers with at least 1 record varied greatly

Provider Results

- Because totals varied so much by provider, overall results were more weighted towards some providers
- One provider performed ~35% procedures after trainings
- Sensitivity analyses were performed excluding the provider in question

Procedure Count Results

- Original analyses only counted procedures for patients identified in the providers' panels
 - Used PCMM table to identify panels
- May not have had full capture
 - Not all patients identified by PCMM
 - Performed procedures on other PCP's patients
- ~15% more procedures found when looking at all patients
- Aggregation issues
 - Multiple VisitSID's were showing up for same the patient, provider, visit day, and CPT code

Procedure Count Updated Results

| CPT | N Pre (1 Year) | N Post | N Post (Annual) | Change | Relative Increase |
|-------|----------------|--------|-----------------|--------|-------------------|
| All | 1,618 | 5,776 | 3,599 | 1,981 | 2.22 |
| 11100 | 349 | 1,016 | 704 | 355 | 2.02 |
| 11101 | 81 | 170 | 112 | 31 | 1.38 |
| | | | | | |
| 17110 | 177 | 798 | 455 | 278 | 2.57 |

- Overall, there was a 2.22 relative increase in procedures performed after mini-residency training
- Increases observed across the majority of CPT codes
- Some procedures saw greater than two-fold increase

Procedure Count Updated Results

| CPT | N Pre (1 Year) | N Post | N Post (Annual) | Change | Relative Increase |
|-------|----------------|--------|-----------------|--------|-------------------|
| All | 567 | 3,732 | 2,630 | 2,063 | 4.64 |
| 11100 | 50 | 750 | 578 | 528 | 11.56 |
| 11101 | 12 | 102 | 79 | 67 | 6.58 |
| | | | | | |
| 17110 | 70 | 492 | 310 | 240 | 4.43 |

- If we removed the 1 high volume provider, overall relative increase jumped to 4.64

Further Analyses

- Look at rate of uptake in procedures performed after training
- How much variation across training sites was observed
- Return on investment

Qualitative Evaluation of Mini-Residency Programs

- Musculoskeletal and dermatology training
- Worked closely with OSC and clinical leads of the training programs on interview guides
 - Conducted interviews 1 year after training
 - Organizational factors affecting each provider's ability to use their training
 - Semi-structured interviews with 15 providers

Methods of Analysis

- Interview data were deductively rated using organizational factors from CFIR
- CFIR factors rated as negative, neutral, or positive in each respondent's work environment
- Results from ratings analyzed to identify associations between ratings and implementation success
- Interviews also coded inductively to identify other themes outside of CFIR factors.

Definition of MRP Implementation Success

Increase in Number of Procedures Performed Post-Training

| Training Program | Mean (# of procedures post-training - # of procedures pre-training) | |
|------------------|---|-----------------------------|
| | Low implementation success | High implementation success |
| MSK | 1.4 (range 0-2, N=9)) | 78.4 (range 71-86, N=2) |
| Dermatology | 0 (N=1) | 186.0 (range 32-463, N=3) |

Qualitative findings

- Factors associated with implementation success:
 - Available resources, leadership engagement (MSK)
 - Leader engagement (Derm)
- Positive perceptions of the program in following domains: compatibility (time to apply), knowledge & beliefs, and patient needs & resources
- Negative or neutral perceptions of program: goals and feedback

Recommendations About Mini-Residency Program

- Provide tips to providers on how they can get the equipment and supplies
- Check-in with leadership at low implementation sites to get feedback about program
- Provide leadership at low implementation sites specific examples of program success
- Help sites establish ways to measure outcomes of program

E-Consults

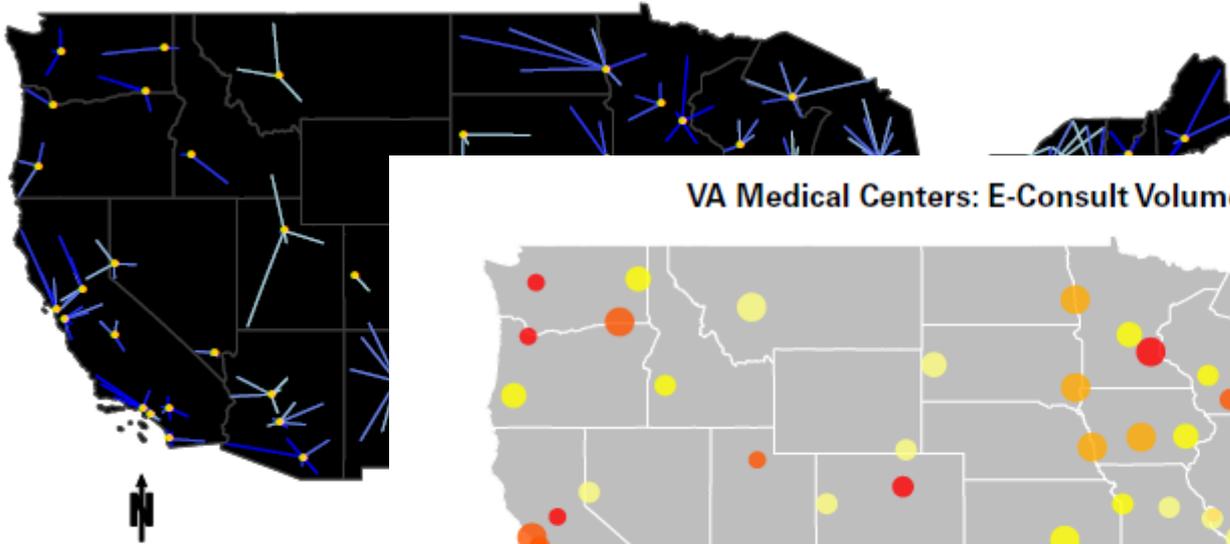
History of VHA E-Consult program:

- National E-Consult initiative began with 15 pilot sites in two cohorts:
 - alpha sites began in May 2011
 - beta sites began in July 2011

| | |
|--------------------------|--------------------|
| Diabetes | Hepatitis C |
| Geriatrics | Cardiology |
| Liver Transplant | Dementia |
| Gastrointestinal Disease | Pulmonary |
| Rheumatology | Pain Management |
| Neurosurgery | Infectious Disease |
| Hematology/Oncology | Vascular Surgery |

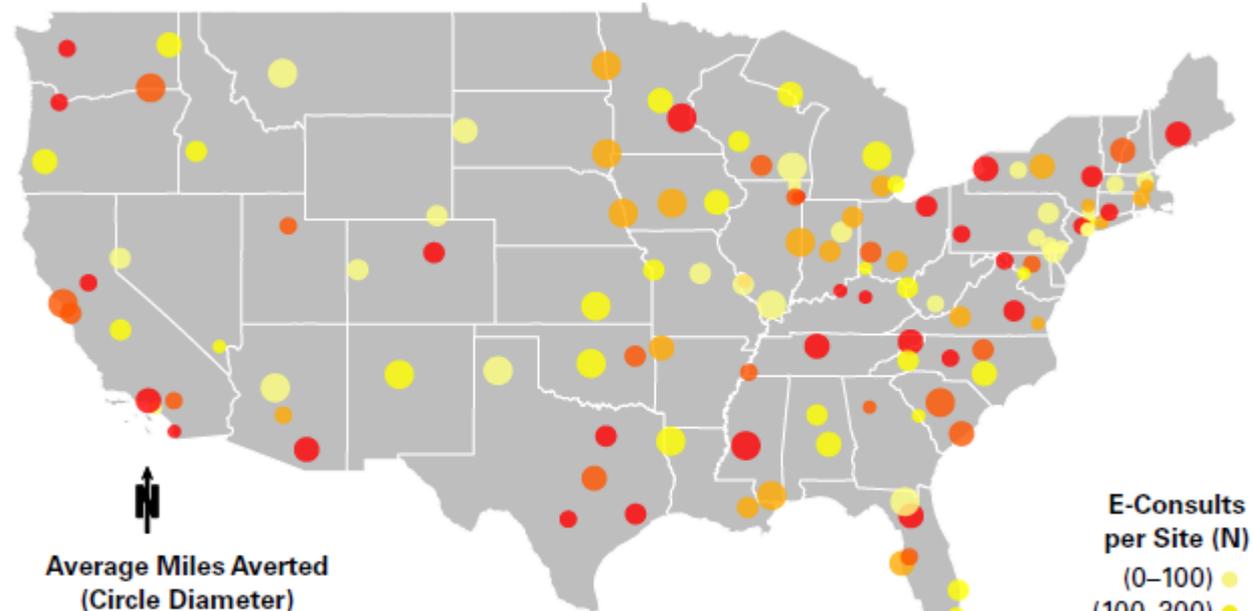
Use and Spread of E-Consults

VA Medical Centers: E-Consult Touches



VA Medical Center (Hub-Spoke (Community Connection))

VA Medical Centers: E-Consult Volume and Miles Averted



Average Miles Averted (Circle Diameter)



E-Consults per Site (N)



Qualitative Evaluation of E-Consults

Overview:

- Conducted 2 waves of key informant interviews over a one-year time period at 8 of 15 E-Consult pilot sites
- Sites were selected for variation in early progress of implementation

Findings: E-Consult Implementation

- E-Consults provided a formal structure to practice of “curbside” advice from specialists
- Data obtained through E-Consults improved the quality of the in-person consultations

“You had to know the person in the old days. After E-Consults, responses improved”

“It’s another way of getting care to the patient when the patient needs it without having to wait”

- Specialists drove the implementation process across sites
 - E-Consult templates were sometimes developed without PCP input and could be onerous to complete

Findings: Impact on Providers

- Many PCPs spoke positively about this opportunity to learn from specialists and valued the input they received
 - “We are able to step in with E-Consults to coordinate services and this has been huge in improving care.”*
 - “I like the E-Consults, they’re very detailed, the information they give you is educational.”*
- E-Consults complement patient-centered care being implemented throughout VHA
 - “The PACT team (patient-centered medical home) seeks to improve quality of care. E-Consult fits very well with this because answers to questions can come quickly and the Veteran may not need to come back to the clinic to be seen even though things are still getting accomplished. E-Consult works very well as a tool for PACT.”*
- E-Consults enhanced communication and collaboration between PCPs and specialists
 - Improved timeliness of consult

Change in Perspectives Over Time

- Support for the program has increased over time
 - “When we talked last year we only had two clinics categorized as E-Consults, as of now we have 14 E-Consults available for our providers. I think the numbers are growing”*
- Participants were generally positive about E-Consults at baseline and this perception increased over time
- Both PCPs and specialists reported improved communication following the launch of E-Consults
 - “I think it opens up access and information and knowledge to everybody”*
- E-Consults were credited with improving access to specialty care for Veterans
 - “I think it’s helping Veterans”*

Challenges/Leadership Response

Challenges to Implementing E-Consults:

- Lack of resources to respond to:
 - Referral requests
 - Lack of referral policies and standardized procedures
 - Confusion related to roles and responsibilities

Leadership Response:

- OSC drafted field guidance and communication plan to support these efforts

Challenges to Implementing E-Consults:

- Initial workload credit was felt to be inadequate by specialists

Leadership Response:

- Workload specifications and credit have changed from one code to three codes in order to more accurately reflect the amount of time a specialist consultant spends reviewing the electronic health record and responding to the consult

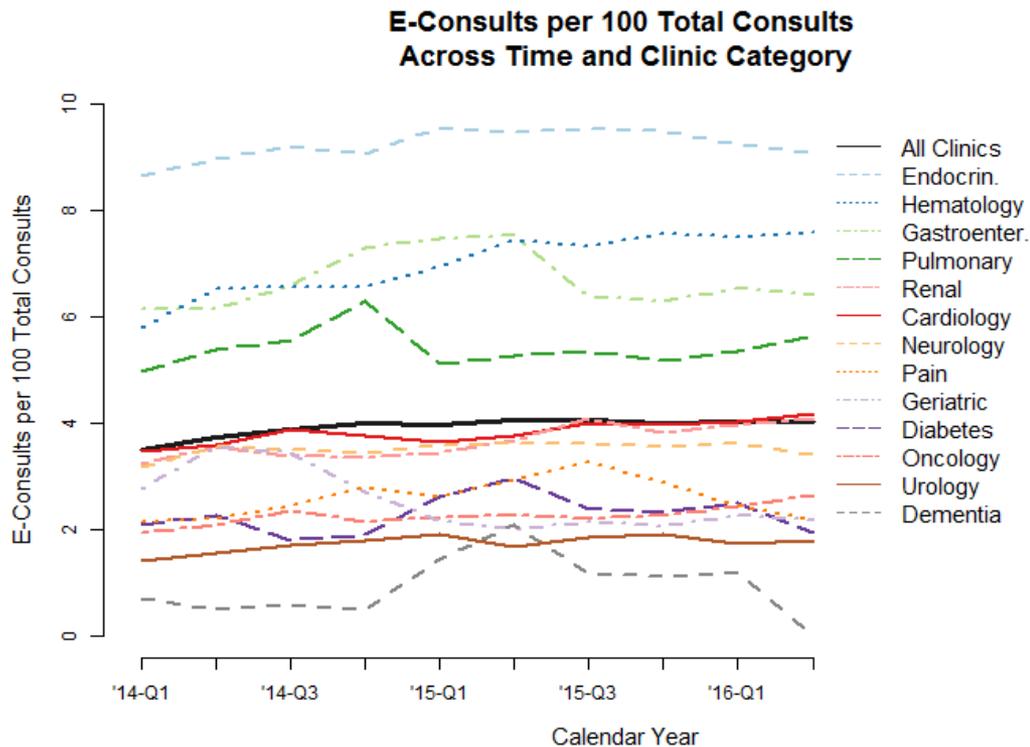
Trends in E-Consult Use

- New analysis - identify trends in E-Consult use since January 1, 2014
- Temporal trend – Is the rate of E-Consult use increasing or decreasing relative to all specialty care visits, including in-person visits?
- Review results across 13 separate specialties nationwide

E-Consult - Temporal Analysis

- Summary metric – number of E-Consult per 100 total specialist visits
- Results aggregated by quarter between January 2014 and June 2016
- Visually present temporal trends in E-Consult use stratified by specialty

Results



- Slight increase in the proportion of E-Consults since January, 2014
- Results somewhat consistent by specialty

E-Consult – Site Level Analysis

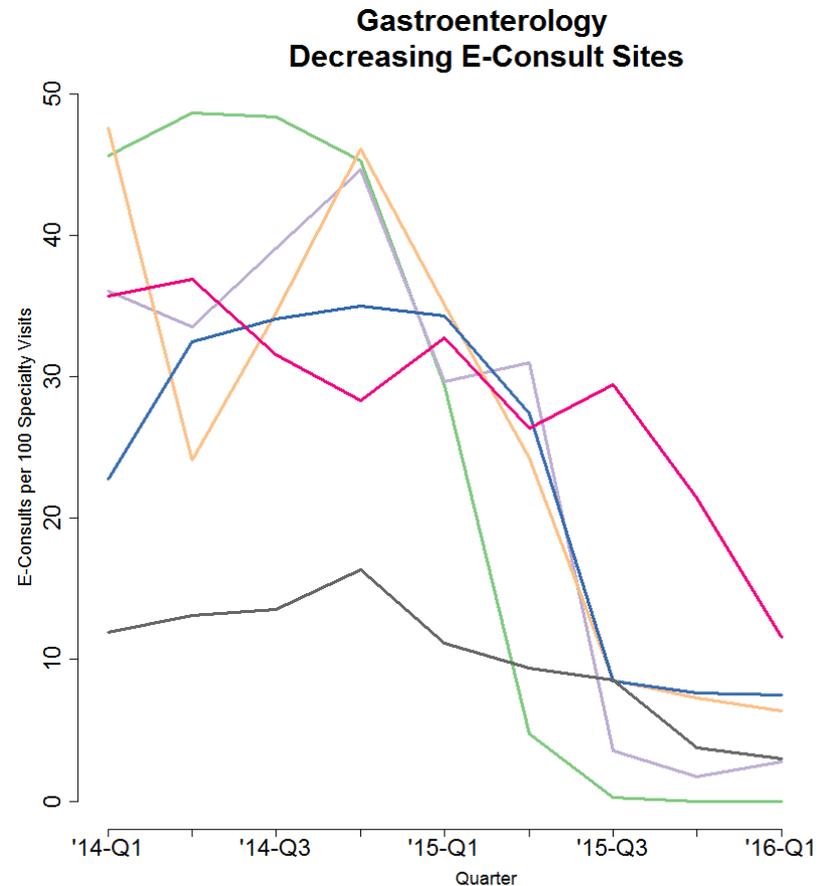
- Site level component – how does site E-Consult use compare to national trend
- Flag sites whose trend in use is below the national average
- Mixed methods approach – qualitative interviews with flagged sites to further understand drivers of observed trends

E-Consult – Site Level Analysis

- Quantitative method: Linear mixed model with time as the predictor
 - Outcome was number of E-Consults per 100 specialty visits aggregated by quarter and site
- Random intercept and slope
 - Random slope indicated site deviations from overall temporal trend
- Flag sites with large negative random slopes

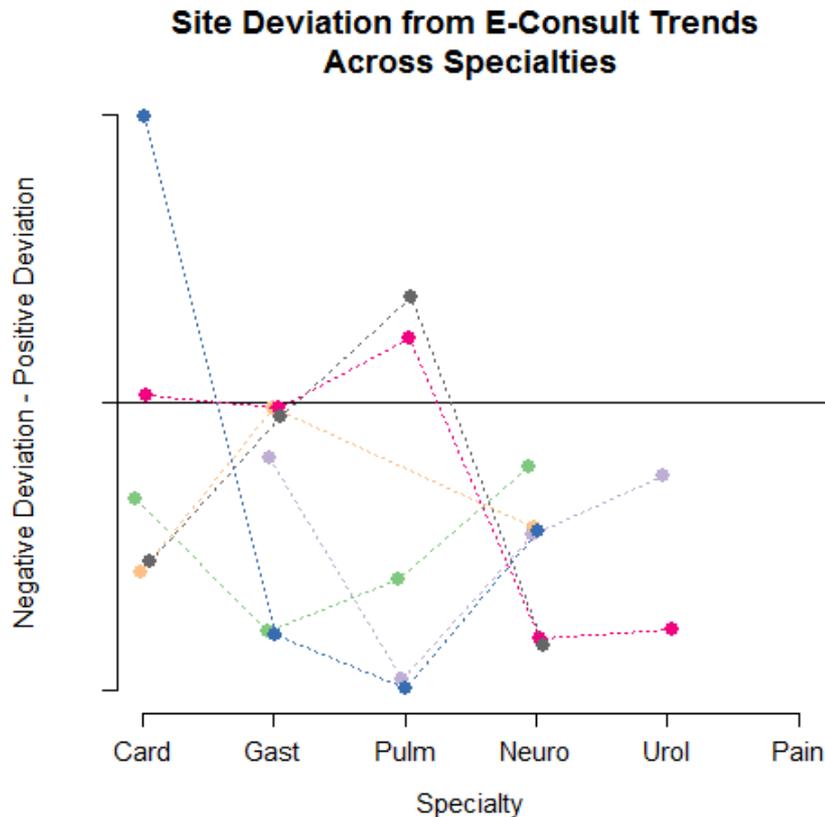
Site Level Results

- Observed steep declines in E-Consult rates for some sites
- Which sites have lower trend across multiple specialties?
- What was the cause of these declines?



Site Level Results

Below Trend



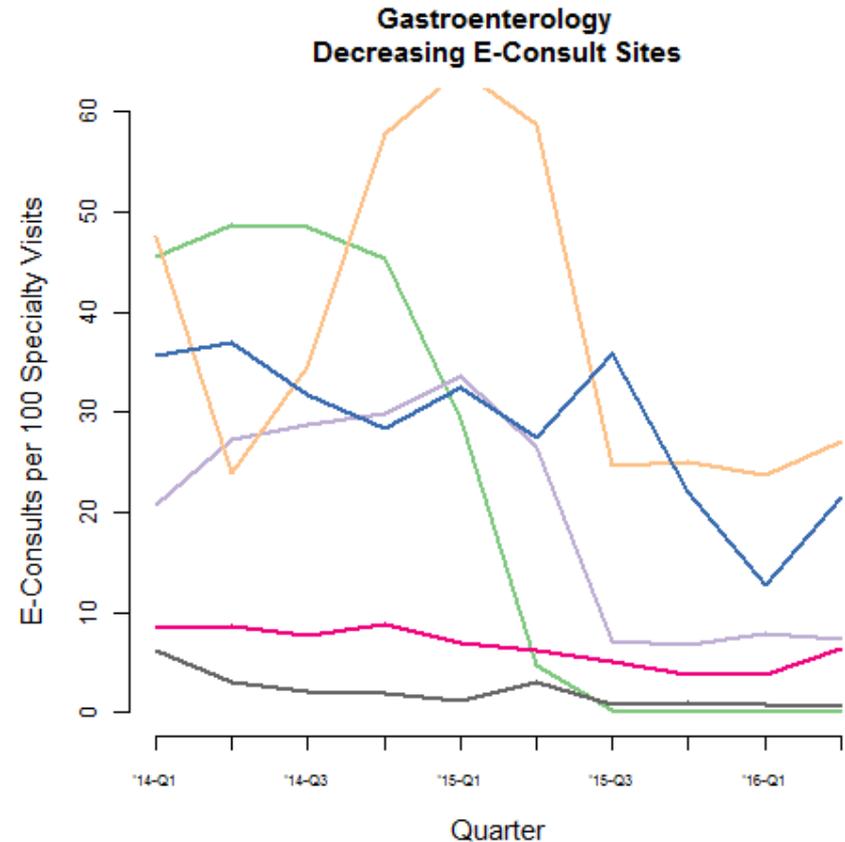
- Flagged sites whose trend in E-Consult use deviated negatively from overall trend
- Conducted qualitative interviews with some of these sites to identify potential causes of decrease in use

Qualitative Interviews

- Telephone interviews at flagged sites focused on how E-Consults were being used
- Provided a description of the observed decrease in number of E-Consults by site and sites provided a response
- Participants were surprised at the decline seen in the data
- Further investigation on our end indicated updates to the algorithm used to flag E-Consult

Updated Results

- After updating the data, sites still seeing decline
- However, drop is not as drastic



Future Exploration

- Other E-Consult metrics
 - E.g. In-person visits with specialist after E-Consult
- Partially coded visits
- Purpose of E-Consults
 - Explore variations across site and specialties

Lessons Learned from Specialty Care Evaluation Center

- Iterative process
- Operational partner engagement critical
- Deadlines are short and can be challenging to meet
- Engage sites and provide reports back as feedback
- F2F visits with operational partner helpful
- Negotiate timelines
- Flexibility in deliverables
- Plan ahead but expect major changes along the way
- Identify data challenges as you go
- Be mindful of outside factors that may influence results

Questions?

- Thanks to all of the Specialty Care Evaluation Center team members over the last 5 years who have contributed to this work
 - Ann Arbor
 - Cleveland
 - Denver
 - East Orange
 - Seattle

Contact Info

Contact Information

Mike Ho, MD, PhD – Michael.Ho@va.gov

Tom Glorioso, MS – Thomas.Glorioso@va.gov