Electronic Consultations (E-consults) vs Face-to-Face Consults: Advancing Infectious Disease Care in a Large Veterans Affairs Healthcare System

**Background**
- The Veterans Affairs Boston Healthcare System (VABHS) is a large tertiary care facility, receiving Infectious Disease (ID) consults from acute inpatient settings, long-term care facilities (LTCF), and outpatient clinics across New England.
- Electronic consults (EC) are asynchronous, consultative, provider-to-provider communications that occur within the electronic health record. EC may mitigate the need for face-to-face (FTF) visit.
- The scope and impact of EC on FTF consultation in ID is not well described.

**Methods**
- VABHS began utilizing EC as a way to improve access to subspecialty care in 2012.
- ID E-consults are performed at VABHS for VABHS outpatients and LTCF patients, and also non-VA Boston facilities, including Bedford and Central Western Massachusetts.
- Using administrative data, the rates and locations for consultation were extracted.
- Electronic health record review was used to elucidate reasons for consultation.
- The frequency and indications for FTF consults in 2011 were compared to rates and indications of FTF consults and EC consults in 2014.

**Results**
- There were 193 FTF consults in 2011 compared to 195 FTF consults in 2014 (Figure 1). During this time period the total number of inpatient hospitalizations and outpatient visits at the VA medical centers remained unchanged.
- ID received 308 e-consults in 2014.
- In each data set the most common question s were related to antimicrobial use for bacterial infections (Figure 2). Most were about invasive bacterial infections or UTI. In 2011, FTF consults were pertaining to (48 invasive infections, 7 UTIs), in 2014, FTF (34 invasive infections, 1 UTI), 2014 EC (26 invasive infections, 26 UTI).
- Travel related consult s increased from 2011 (n=15 FTF ) to 2014 (19 FTF + 40 EC).
- Frequency of e-consults for Lyme disease, UTI, C diff, perioperative antibiotics, and immunization were significantly higher than FTF consults in 2014 (p <.05 for each).
- EC were utilized more than FTF by LTCF [45 (14.8%) EC vs. 6 (3%) FTF] and non-Boston facilities [69 (22%) EC vs. 14 (7%) FTF] . (p <.05 for each).
- In 2014, turnaround time for EC was 0.6 days (SD 3.6) and 16.5 days (SD 12.4) for FTF consults.
- 98% of EC were completed by 1 designated ID provider.

**Conclusions**
- Certain diagnoses such as UTI, noninvasive bacterial infections, perioperative surgical antibiotic management rarely trigger a FTF, but generate many EC, providing an opportunity to enhance antibiotic stewardship.
- Whether this increased specialty involvement in care leads to improved outcomes remains to be evaluated.
- The implementation of EC did not result in a compensatory decrease in the number of FTF consults; the EC may represent new consultative work for the ID specialist.
- The EC turnaround time is significantly shorter than FTF; this may be partially attributable to having a single motivated ID specialist completing nearly all of the EC.