The role of the lab in infection prevention and AMS

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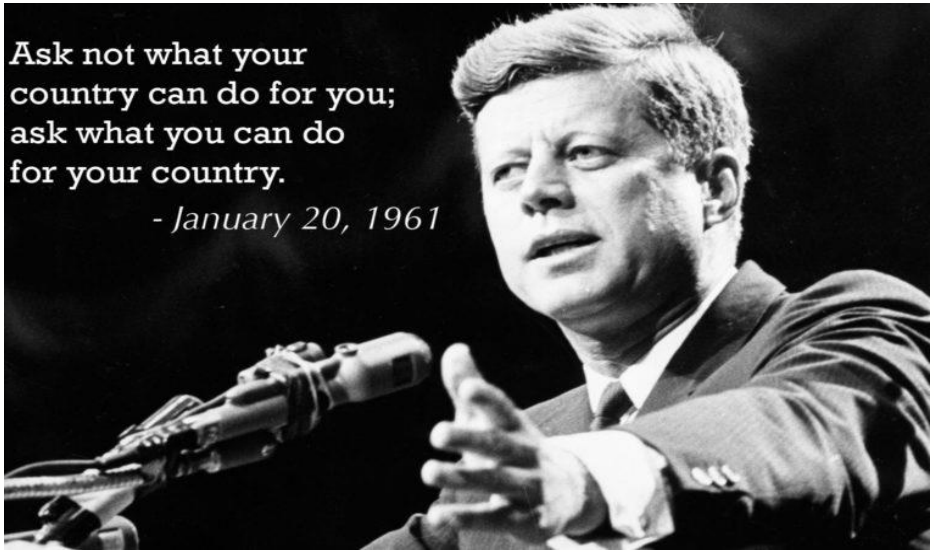
Disclosures or conflicts

- personal opinion

- What your lab can do for you?
  - IPC program
  - AMS program



- What can you do for the lab?

Lab staff

- Expertise
  - ID organisms & determine significance
  - susceptibility testing
  - understand resistance mechanisms
  - understand limitations of tests
- Care about
  - patients with infections getting better
  - reducing resistance

ICP

- Expertise
  - communication, education
  - patient advocate
  - risk management
  - transmission of infection
- Care about
  - reducing avoidable infection
  - reducing resistance

AMS

- Expertise
  - pharmaceuticals - antimicrobials
  - appropriate use – drug, dose, time, route
  - communication, education
  - assertive & sensitive
- Care about
  - all patients getting better
  - reducing resistance

Role of the lab

- Specimen collection & transport
- Accurate & timely testing & reporting
  - detect infections
- Surveillance
  - monitor infection, colonisation & resistance
- Analysis of susceptibility data

Specimen collection

- Optimal micro evaluation ASAP
- Avoiding contamination
  - BC contamination rates
- Additional testing where relevant
  - viral, Ag, NAA

HAI Surveillance

- Accurate ID & susceptibility testing
  - HAI pathogens
  - outbreak detection
- LIS
  - data mining / interface with patient record

Surveillance Cultures

- Limit active surveillance
  - new pathogens
  - continued transmission despite precautions
  - outbreaks
- HCW screening
  - what to do with positive results?

Rapid Diagnostics

- Rapid & accurate detection resistances
- TAT ↓
- Early intervention
  - isolation
  - infection precautions
  - investigation & mitigation of source
- Beware indiscriminate use
  - false positives / pseudo-outbreaks

Reporting results

- Critical results / requests
  - agree on organisms/infections & process
  - pager/phone, electronic
- Antibiograms
  - empirical treatment
  - prescribing guidelines

Reporting

- Selective / cascade
  - 2º agents if 1º R
  - available on formulary
- Interpretive comments
  - significance of isolate(s)
  - treatment advice

Education

- HCW
  - some bugs are normal
  - some aren’t!
- ICP
  - contamination or infection

Outbreaks

- Early warning system
  - clusters / possible patient-patient transmission
  - unusual resistance patterns
- Assist/advise re case definition
  - ?? lab diagnosis
- Confirm cases

Outbreak investigation

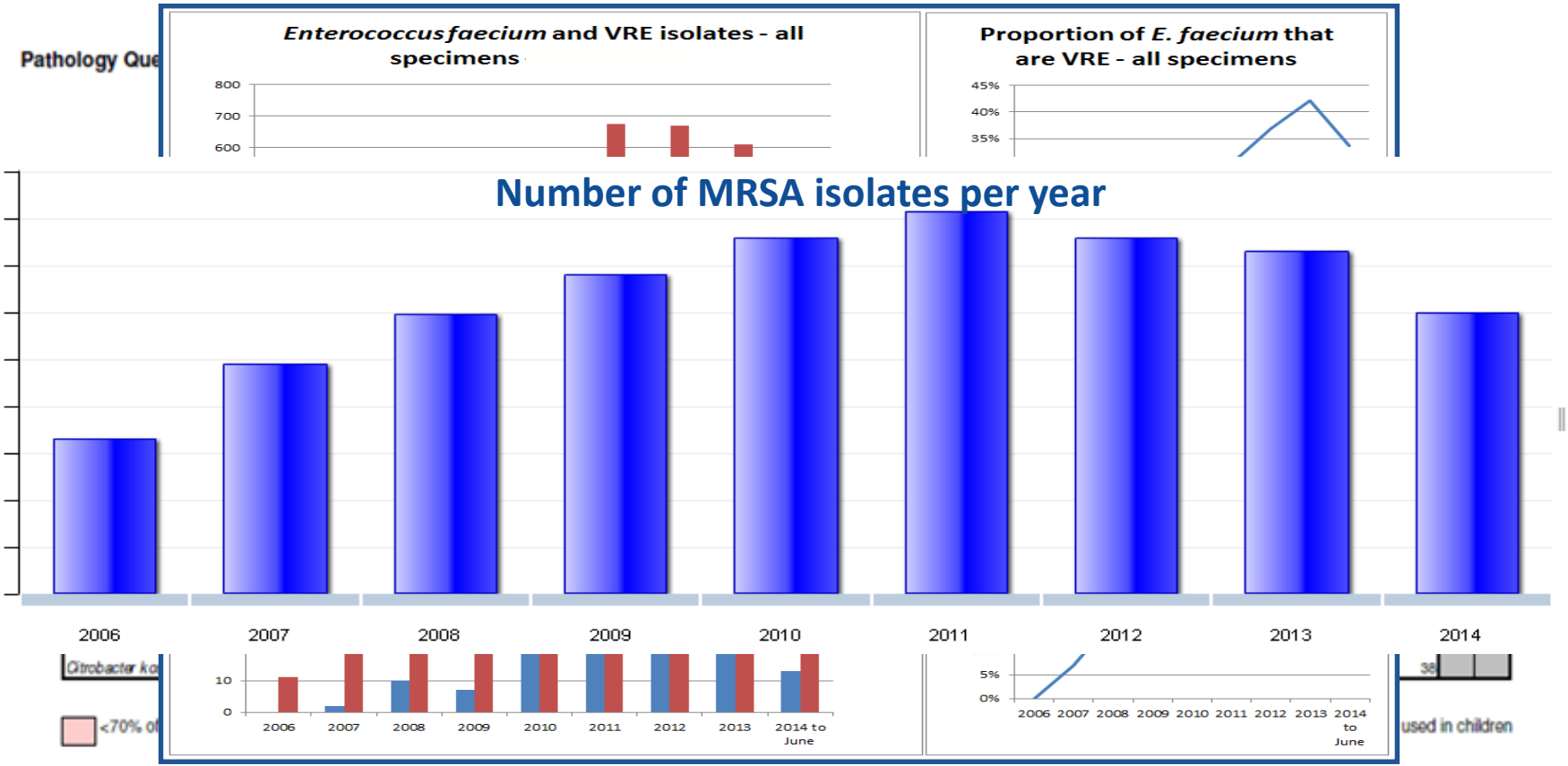
- Data for background/baseline rates
- Identify reservoir - environmental specimens
  - if justifiable
- Typing of strains
- Adjust lab procedures

High risk units

- Rounds
  - interpret results
  - review AB use
- MROs in unit
- Local antibiogram

Analysis of resistance

- Cumulative antibiograms
  - AMS, D&T, QUM Committee
  - inform prescribing guidelines
  - may need interpretation
  - formulary management
- Resistance trends
- Participation in targeted surveillance


Pathology Que
Enterococcus faecium and VRE isolates - all specimens
800
700
600
Proportion of E. faecium that are VRE - all specimens
45%
40%
35%
Number of MRSA isolates per year
2006
2007
2008
2009
2010
2011
2012
2013
2014
10
0
2006 2007 2008 2009 2010 2011 2012 2013 2014 to June
5%
0%
2006 2007 2008 2009 2010 2011 2012 2013 2014 to June
used in children

IPC & AMS Committees

- Clinical microbiologist / senior scientist
  - interpretation of results
  - problem solve
  - understand IPC/AMS problems & organise lab response
  - helps IPC/AMS to understand lab issues – processing timelines TAT & manage expectations
  - communicate changes that impact on IPC/AMS

- visit them if you can
- you'll be made welcome
- they won't bite