How best to engage with non-infection specialists that have a responsibility for antimicrobial use

Bridget Atkins
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Bridget Atkins
My experience working with surgeons....

- Infection Consult service across the trust
- Micro/ID physician, Bone Infection Unit, Nuffield Orthopaedic Centre, Oxford.

Collaborations

- Orthopaedic Sampling methods
  - In theatre
  - Laboratory processing
- Antimicrobial guidelines
  - Local: prophylaxis and treatment
  - National e.g. BOAST antibiotic guidelines for open fractures

Educational meetings and conferences
10,000 orthopaedic operations/yr
1500 primary hips
350 revisions/yr
37 surgeons in Orthopaedics and Plastics
6 ID/micro or ID/GIM Physicians (1.5 WTE)
Dear Bone Infection unit

We would be grateful if you could review this 51 year old man who sustained an open proximal tibial shaft fracture after a motorbike injury in Thailand on 25/5/14. He also sustained rib fractures and a pneumothorax and was admitted to ITU. In Thailand he was taken to theatre for an ORIF but unfortunately developed wound infection and breakdown after this. He was taken to theatre for a gastrocnemius flap and was started on oral antibiotics (cefazolin). He flew back to the UK on 20/8/14 and presented to us on 21/8/1 with wound breakdown and having been able to see metalwork for some weeks. His recent swabs show colonisation with a multi-drug resistant Klebsiella spp.

X-rays and CT scan show........

Orthopaedics please!

Help! Plastics please!

Help! An Infection specialist please!
What is the problem?

I would be very grateful to have your kind opinion regarding this gentleman who came under me nearly a month ago with an infected left knee. He had some pre-existing illness and sustained an infection which required a washout. Initial microbiology results came back as a Streptococcus type of organism which is sensitive to Benzylpenicillin and we were putting him on Benzylpenicillin for a week and the microbiologists came back and said that this is not a Streptococcus it is a Staphylococcus and he needs to be on Flucloxacillin. He has had a second washout and a heavy dose of antibiotics IV for 4 weeks now. He is not getting anywhere and he requires a further washout because the knee has swollen up again and required arthroscopy/synovectomy and there was a pus in the knee joint. The microbiologist recommendation, despite my opinion that he required bone penetrating antibiotics, to put him again on 2 gm of Flucloxacillin.

This gentleman is 77 years old. He has got a pacemaker which is why we are not able to do an MRI scan of his knee to exclude osteomyelitis. I am concerned about this patient and we are not controlling his infection and understandably the patient is frustrated because he has been in hospital nearly 6 weeks now and we are not controlling his infection because of microbiologist recommendation I am not allowed him to give him any more heavy antibiotics.

I would be very grateful if you would review this gentleman and give us your expert opinion regarding further management.

Yours sincerely
Who is the problem?

Microbiologist

Busy, Frustrated?
Has not met the patient?
Does not fully understand the problem?
Unsupportive?
Unsupported by colleagues?

Orthopaedic Surgeon

• Stressed
• Beyond his/her area of expertise
• Unsupported by colleagues
• Poor dialogue with microbiology

Another successful session of conflict resolution.
Daptomycin
453.87g/mmol

Flucloxacillin

1619.7g/mmol

Daptomycin

Flucloxacillin
It’s a Fan!

It’s a Wall!

It’s a Spear!

It’s a Rope!

It’s a Snake!

It’s a Tree!
**SURGICAL PRIORITIES**
- Diagnostics
- Patient selection
  - Capacity, consent, talking to relatives, anaesthetic review, co-morbidities, risk benefit etc
- High quality surgery
  - correct side,
  - procedure
  - sampling
  - haemostasis
  - dead space management
  - wound closure
  - antibiotics
- Post op care
  - Patient (fluids, blood etc)
  - Wound dressings
  - Antibiotics

**INFECTION SPECIALIST PRIORITIES**
- (Advances in) diagnostics
- Antimicrobial stewardship
- Infection prevention and control
- Device related infections
- Immunocompromised hosts
- Antivirals
- Imported fevers
- Clinical syndromes
Great research opportunity!

Need to optimise weight, BP, diabetes!

We will give Tuskacillin

I can move this tissue into the defect!

Needs better stability

Hmmm!! Faecal flora!!
They are interested in the best possible care for the patient in front of them.

They are very busy and being aggressively job planned so attendance at ad hoc case review meetings is hard.

Best time to interact is in front of complex infected patients:
- understand the problem, share the problem
- review the results, imaging etc etc
- talk to the patient with the surgeon
- help with monitoring and follow up

Then discuss cross departmental guidelines, processes etc. further at mutually agreed meetings.
Team Working
Interactions over antimicrobial usage

Controversial - Minimal impact

Build on relationship, present data, go to meetings.

Evidence based - moderate impact

Potential harm to patients

Regular dialogue, see patients, understand the problem, respect opinion, building relationships, MDT discussion. Gain confidence and respect of team. You can ‘lose’ a few of these.

Then: hopefully no difficulty solving these. Concentrate effort on these. But be sure of your data/expertise (Escalate if not successful).
For this to work you need:

- Mutual respect
- A stable group of ward based Infection specialists who are ‘out there’ seeing patients talking to them with surgeons, reviewing cases, examining wounds etc.
- Infection specialists running outpatient clinics to follow up antimicrobial issues
- Educational sessions
- Time to do this
- A good style (charisma?)
  - Questioning approach
  - Empathy
  - Assertiveness
- Confidence that the Infection specialist is a trusted friend so it is OK for the surgeon to admit that they are don’t know something
Give tuskacillin

Give blundermycin
What is Assertiveness?

- being able to stand up for your own or other people's rights in a calm and positive way, without being either aggressive, or passively accepting 'wrong'.
The Passive Person

Is afraid to speak up

Speaks softly

Avoids looking at people

Shows little or no expression

Slouches and withdraws

Isolates self from groups

Agrees with others, despite feelings

Values self less than others

Hurts self to avoid hurting others

Does not reach goals and may not know goals

You're okay, I'm not

The Aggressive Person

Interrupts and 'talks over' others

Speaks loudly

Glares and stares at others

Intimidates others with expressions

Stands rigidly, crosses arms, invades others' personal space

Controls groups

Only considers own feelings, and/or demands of others

Values self more than others

Hurts others to avoid being hurt

Reaches goals but hurts others in the process

I'm okay, you're not
The Assertive Person

- Speaks openly
- Uses a conversational tone
- Makes good eye contact
- Shows expressions that match the message
- Relaxes and adopts an open posture and expressions
- Participates in groups
- Speaks to the point
- Values self equal to others
- Tries to hurt no one (including self)
- Usually reaches goals without alienating others
- I'm okay, you're okay
Do’s and Don’ts: DO

- Respect the expertise of your surgical colleagues
- Discuss complex cases with the surgical consultant before making recommendations in writing
- If needed, consult with other infection experts more experienced in the particular field
- Work out when is best to catch surgeons on ward (often <8am or > 5pm)
- Get to know the theatre coffee room
- Go to theatres to learn – (even in the middle of the night!!)
- Be assertive, clear, calm, repeat the message “broken record”
- Escalate if needed – see help and guidance from the medical director/DIPC or other lead
- Write combined antimicrobial guidelines. Let the surgeons lead the categories and draft the recommendations first then meet to discuss.
Do: Educate surgeons

- at registrar training days, MDT meetings etc.
- to understand that antibiotics are not a replacement for surgery if needed
- nor a delaying tactic
- adequate microbiological sampling
- “start Smart and then Focus”
- show them evidence
  - E.g. The effect of single dose of antibiotic on the gut microbiome
  - Adverse effects of antibiotics
  - *Clostridium difficile* rates
- studies on prophylaxis
The multivariate risk factors acquisition of rectal carriage of ESBL-producing Enterobacteriaceae:
- older than 65 years
- of age and recent broad-spectrum antimicrobial treatment.
Effect of antibiotics on the gut flora

Serial stool samples from 8 haematology inpatients over 50 days

Vertical bars represent one sample, each colour is a different type of bacteria (green is Enterococcus)

Horizontal bars represent antibiotic courses (blue) or bacteraemia (green)

Antibiotics often rapidly lead to intestinal domination with VRE, with frequent bacteraemia

**Catch them early...**

**Sections of trauma and orthopaedic curricula**

<table>
<thead>
<tr>
<th>Infection control</th>
<th>Antibiotics:</th>
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<tbody>
<tr>
<td>• Anticipate the potential for infection in patients being cared for</td>
<td>• Common pathogens in surgical patients</td>
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<tr>
<td>• Advise patients on matters of infection risk, transmission and control</td>
<td>• Antibiotic sensitivities</td>
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<tr>
<td>• Actively engage in local infection control procedures</td>
<td>• Antibiotic side-effects</td>
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<tr>
<td>• Prescribe antibiotics according to local guidelines and work with microbiological services where appropriate</td>
<td>• Principles of prophylaxis and treatment</td>
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<tr>
<td>• Recognise potential for cross-infection in clinical settings</td>
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<tr>
<td>• Practice aseptic technique whenever relevant</td>
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**Pharmacology:**

• The pharmacology and safe prescribing of drugs used in the treatment of surgical diseases including antibiotics, ......

| Manage complex cases effectively in collaboration with infection control specialists |

**Antibiotics:**

• Appropriate prescription of antibiotics

**Microbiology:**

• Surgically important micro organisms including blood borne viruses
• Soft tissue infections including cellulitis, abscesses, necrotising fasciitis, gangrene
• Sources of infection
• Sepsis and septic shock
• Asepsis and antisepsis
• Principles of disinfection and sterilisation
• Antibiotics including prophylaxis and resistance
• Principles of high risk patient management
• Hospital acquired infections
Don’ts

- Use the patients notes to have an argument
- Force the surgeon to do something e.g. remove a device – discuss the issue and understand the surgical issues. There are often very good reasons to retain a device.
- Patronise and/or direct the surgeons
- Empathise e.g. it is galling to be told what to do by a microbiologist sitting comfortable at home when you are up doing a 3-4 hour operation in the early hours.
- Get cross
- Feel intimidated
- Collude (= secret co-operation or conspiracy in order to deceive others)
  - or yourselves?
My own role models in Micro/ID training e.g;
- Prof Derrick Crook,
- Prof Chris Conlon, Oxford
- Dr Tom Gottlieb, Sydney
(and some excellent role models of how NOT to do it)

- Dr Tony Berendt, Medical Director, Oxford University Hospitals
- Orthopaedic and Plastic surgeons including
  - Martin McNally
  - David Stubbs
  - Ben Kendrick
  - Jamie Ferguson
  - Mark Rogers
  - Alex Ramsden
If all else fails...

“Give us Doughnuts”