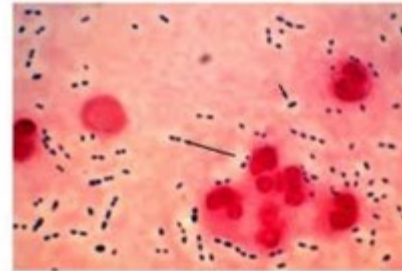
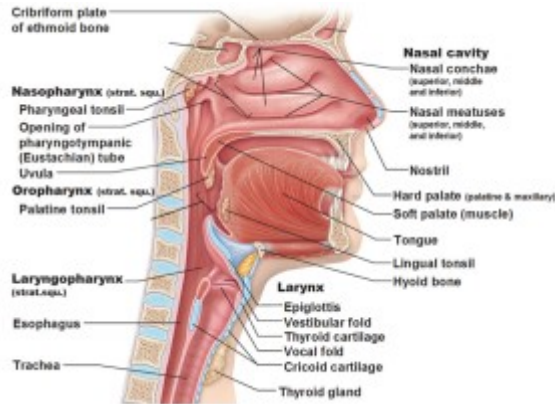


Dr Matthew B. Avison, Senior Lecturer in Microbiology
School of Cellular & Molecular Medicine

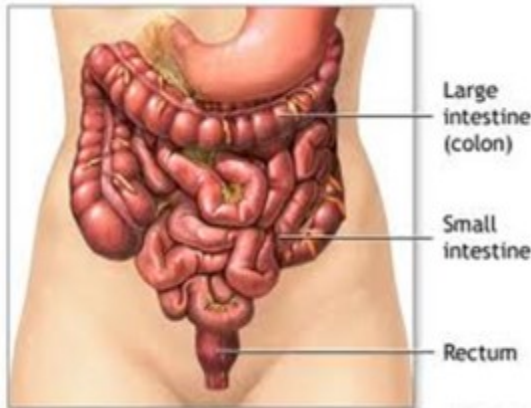
Interdisciplinary AMR (in the real world) Research



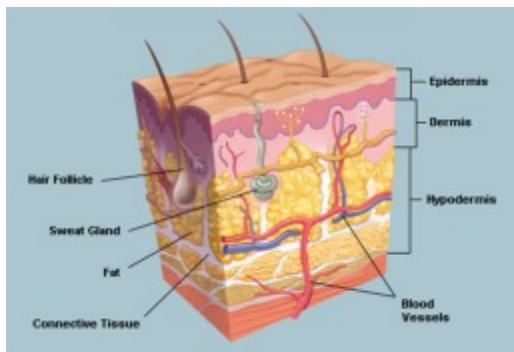
Sources of Bacterial Infection – Normal Flora



Strep. pneumoniae



E. coli

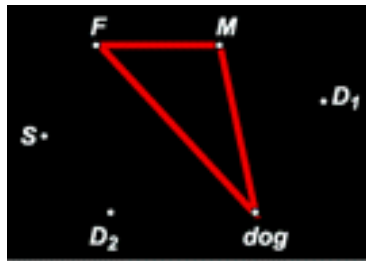


Staph. aureus

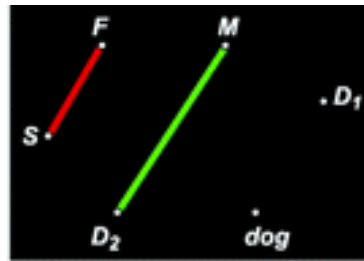
Bacterial Infection: It's a numbers game

- Pneumonia: Approximately 45,000 deaths/year
 - Bloodstream infections: Approximately 40,000 deaths/year
 - Urinary Tract Infections: Approximately 100,000 cases/year
 - Surgical Site Infections: Approximately 4% of all operations
 - In the UK only.
-
- The majority of these infections are opportunistic and many are caused by the patient's own *E. coli*.**

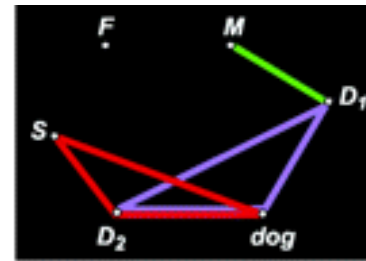
E. coli spreads.



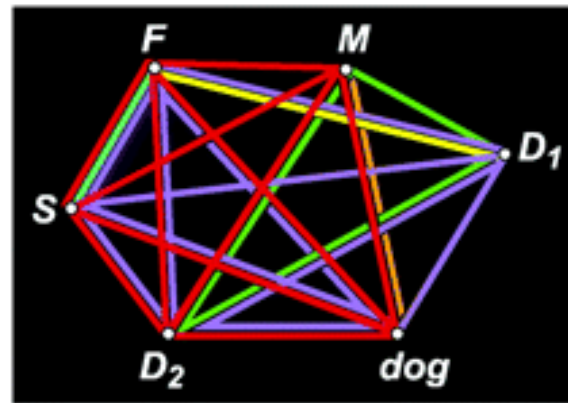
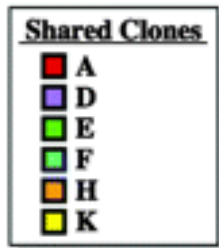
Initial



Week 3



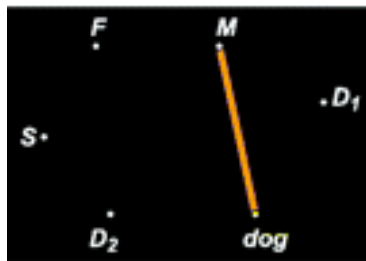
Week 7-9



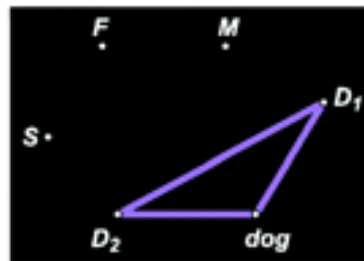
Overall

Johnson et al, 2008

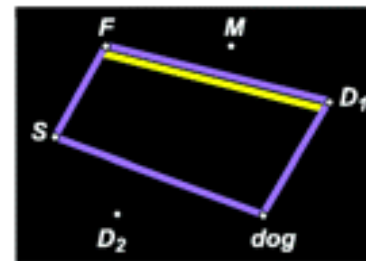
J Clin Micro **46** 4078-82



Week 112



Week 116

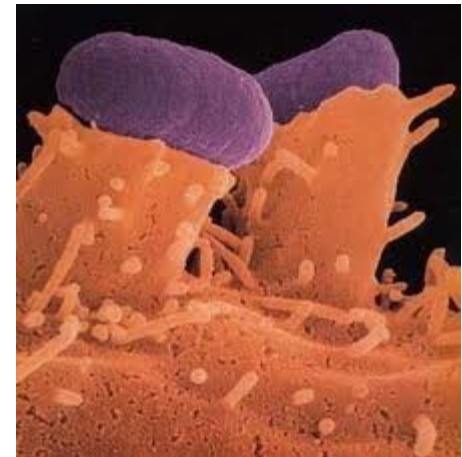


Week 157

Environmental/Food *E. coli*



E. coli



EPEC

***E. coli* transmission in the real world.**



AMR transmission in the real world.

- Farming uses a lot of antibiotics.
- Is there a link with AMR and can it be reversed?
- Do dogs and humans pick up *E. coli* from the environment?
- Is there a link to UTIs caused by Resistant *E. coli*?
- And can this be reversed?



Theme 3



My Strategy for Building an Interdisciplinary Team.

- Ask the right questions.
 - Regulators/users should set the agenda.
- Hold lots of meetings.
 - What do people think they can measure/influence?
 - What access can they provide (impact, cohorts locations)?
- Don't fit square pegs into round holes.
 - choose people for what they can do not what you need them to do.
 - Set up the team and then devise the programme of work.



Kristen Reyher, David Barrett (Farm Animal Vets)

Rachel Casey, Severine Tasker (Small Animal Vets)

Alasdair Hay (GP)

Alasdair MacGowan, Neil Woodford (PHE)

Matt Ellington, Willem van Schaik (Genomics)

Katy Turner, Margaret May (Statistics, Modelling)

Tristan Cogan, Matthew Avison (Microbiology)

